GENERAL LIBRARY University of MICHIGAN

THE AMERICAN
JOURNAL OF PHARMACY.

JULY, 1875.

FLUID EXTRACT OF *GOSSYPIUM HERBACEUM.*

BY J. U. LLOYD.

In the January number of this Journal, Prof. Maisch calls our attention to a fraud in the shape of a spurious bark, purporting to be that of the *Gossypium herbaceum.* This bark was obtained from a wholesale store, and was, either intentionally or through ignorance, thrown upon the market as that of the officinal cotton-root bark. Be this as it may, however, the above mentioned article in the January journal was the means of directing the attention of physicians and druggists generally throughout the country to this bark and its preparations, and they are now disposed (very justly) to examine rather critically any pharmaceutical that comes within their observation which is purported to have been prepared from this bark.

A short time since, one of our retail druggists complained to me of a specimen of this fluid extract. It was prepared by a reliable manufacturer of pharmaceuticals in this city, and when purchased by him seemed prime and trustworthy. It was originally of a rich deep red color, and evidently gave satisfaction. At any rate there was no complaint made of it, and, if I mistake not, he dispensed it several times. However, when about one-fourth of the bottle had been used, he was surprised one day upon attempting to fill a prescription to find the remainder had gelatinized, or, perhaps, the word curdled would better express it; for when it was exhibited to me it presented the form of a brown, soft curdy mass, from which, upon inclining the bottle, a very small amount of an almost colorless liquid would exude. The extract had lost its rich red color, and the liquid that dripped from the coagulated substance exhibited a decided acid reaction.

The brown magma would not dissolve in either alcohol or water, while dilute acids and alkalies alike seemed not to affect it.

Afterwards, another of our city apothecaries, in speaking of this preparation (fluid extract of gossypium), mentioned the variable appearance of the different lots of extracts he had found upon the market; for, while some specimens were of a brownish-yellow color, others would be of a deep red, and the question which presented itself to him in connection with the above-mentioned facts was whether some of them were not prepared from spurious barks?

Messrs. Wallace Brothers, of Statesville, N. C., may be considered excellent authority upon the subject of the crude root, its collection, &c., and in a letter to me they say: "The root and bark of the root are gathered in October, immediately after the cotton is harvested, before the wet weather sets in; for at this time they turn to a deep brown color, and become unfit for use." I have seen specimens of bark upon the market corresponding with the above description of the injured (deep brown) bark, and, indeed, have attempted to prepare an extract by way of experiment from the same. The experiment was a failure, however; for, although the preparation possessed some of the characteristics which pertain to extracts prepared from good bark, any one with much experience would readily perceive it to be a very inferior article, but could scarcely confound it with any other fluid extract.

The bark of the *Gossypium herbaceum*, when prime, is of a yellowish-brown color externally, while internally it is much lighter, almost approaching in some instances to white; when chewed, it imparts merely a sweetish astringent taste. When the fluid extract is prepared from the above-named quality of bark by the officinal process, it is at first often of a brownish-yellow color, without a tinge of red; to the taste it is a true representation of the bark with the exception of the increased sweetness, which is imparted by the glycerin. It is neutral, altering neither the color of reddened nor blue litmus paper. It contains a large amount of tannin and considerable glucose. Upon standing, the extract undergoes a chemical alteration; it gradually changes (sometimes quite rapidly) to a reddish color, ultimately becoming of a very beautiful bright red, while at the same time it becomes very acid, immediately changing blue litmus paper to red, and even effervescing with bicarbonate of potassium. This alteration proceeds as readily in the dark as when exposed to the light, while securely protecting it from the atmosphere will neither retard nor increase the decomposition. The above striking alteration I consider peculiar to this extract, for, although many of our fluid ex-

tracts are prone to decompose, the remarkable change in color in my opinion is a characteristic of *Gossypium*.

Occasionally the chemical decomposition proceeds until the extract is completely disintegrated. This is seldom the case, however, but once in awhile we come across a specimen that has abruptly solidified or curdled (while samples I have purposely placed aside most positively refuse to do likewise, although standing longer than some that have spoiled). The property of coagulating, however, is possessed by fluid extract of *Geranium maculatum*, which, as regards color, is nearly like *Gossypium* after the change to red. However, fluid extract of geranium is red when first made, and so very astringent as to forbid its ever being mistaken for fluid extract of cotton-root.

From the foregoing remarks it will appear that a genuine fluid extract of *Gossypium* may at different periods vary in color from a brownish-yellow to a deep red, and that the several shades found upon the market, perhaps, are prepared from the true *Gossypium*; however, if any of the specimens are not red, and age fails to effect a change to this color, I feel that I may be warranted in saying they were either prepared from spurious barks, or worthless *Gossypium*.

Fluid extract of cotton-root, as I have said, turns invariably to a deep red after standing a time, and occasionally will decompose and coagulate after reaching the above color, which, although rendering the extract worthless, is a proof of its having been genuine; for of the red extracts *Geranium maculatum* is the only one that to my knowledge will gelatinize, and *Geranium* cannot be mistaken for *Gossypium*.

Regarding color alone, either the fluid extract of *Pinus canadensis* or *Geranium maculatum* might be substituted for *Gossypium*, but their taste and properties would forbid, while all of the species of *Populus* I have operated with differ from the true *Gossypium* in every respect. Taking everything into consideration, the probabilities are that the larger share of worthless fluid extract of *Gossypium* is prepared from *Gossypium* bark, but from the kind Wallace Brothers speak of as being *dark brown*, for to my experience we have much of this stuff to contend with.

CINCINNATI, OHIO, *June 1st*, 1875.

NOTE.—The gelatinous mass is probably one of the pectin compounds, perhaps pectosic acid, produced by what has been termed the *pectic fermentation*. Similar changes, the precise causes for which are but little understood, occur in many concentrated liquid preparations of vegetable drugs, and it is curious that occasionally only a portion of such a liquid gelatinizes, while another portion prepared at the

same time and kept apparently under the same conditions, refuses to gelatinize. In some instances the change may be prevented by exhausting the drug with a stronger alcohol, or by adding to the preparation if strongly acid, a little alkali. But no general rule can be laid down, applicable to all cases.—ED. AM. JOUR. PHARM.

ASPIDIUM MARGINALE, WILLDENOW.

BY JAMES LEMON PATTERSON, PH. G.

(*From an Inaugural Essay.*)

This plant has a perennial, horizontal rhizome, from which numerous annual fronds arise, from one to two feet in height. The stipes are thickly beset with brown, tough, transparent scales; the frond is smooth, thickish and almost coriaceous, ovate-oblong in outline, bipinnate; pinnæ lanceolate, broadest at the base; pinnules oblong or oblong scythe-shaped, crowded, obtuse, crenately toothed. The fruit dots are round kidney-shaped, and situated close to the margin, from which the plant takes its name. It grows on rocky hillsides, in rich woods of central Pennsylvania, where I gathered it the latter part of September. I then thought it was *Aspidium Filix-mas*, the rhizomes of both plants closely resembling each other, but through the kindness of Prof. J. M. Maisch have been able to properly classify it as *Aspidium marginale*. The rhizome is probably used to adulterate or sold in place of male-fern.

The following was the process pursued in the analysis of the rhizome:

Treatment with Ether.—The rhizome was reduced to a moderately fine powder, moistened with ether, and packed in a percolator, and ether, specific gravity ·750, passed through until exhausted. The etherial solution was of a reddish-brown color, with a distinct dark-greenish tinge. It was transferred to a still, and about 75 per cent. of the ether recovered; the remainder was evaporated spontaneously until there was no etherial odor present. This, constituting the oleo-resin, according to the process of the United States "Pharmacopœia," was a thick, oily, dark-green liquid, having a nauseous and somewhat acrid taste. On standing a short time it deposited a resin, which was separated and treated with alcohol, specific gravity ·850. After evaporating the alcohol the resin was of a reddish-brown color, but on long exposure to the air became darker, harder and brittle; it was fusible by heat, had a somewhat aromatic odor and bitter taste, dissolved readily in ether, alcohol, oil of turpentine, ammonia, potassa and carbonate of

potassium, and was heavier than water. The alcoholic solution had an acid reaction, and the resin is therefore similar to that obtained by Luck from *Aspidium Filix-mas.*

Filicic Acid.—The etherial extract, after standing a few weeks, deposited on the sides of the vessel yellow crystals, which were collected on a filter and washed with ether, then with ether-alcohol, and dissolved in diluted alcohol with the addition of carbonate of potassium, decolorized with animal charcoal, precipitated by HCl, and recrystallized from ether, which gave small granular, slightly yellowish crystals, which, when heated, yielded an oily substance smelling of butyric acid. They burned with a luminous flame when heated on platinum foil, and left a shining charcoal. Treated with ammonia, they quickly assumed a dark brownish-yellow color. They are but sparingly soluble in diluted alcohol, soluble in boiling absolute alcohol, only slightly more soluble in boiling than cold ether, and soluble in fats, volatile oils and bisulphide of carbon. They show the reactions to all the tests applied by Luck, and I believe then to be identical to the filicic acid obtained by him from the true male-fern.

Treatment with Alcohol.—The dregs, after having been exhausted with ether, were freed from all traces of it by exposure to the air, and then macerated for three days with alcohol, specific gravity ·835, and thoroughly exhausted in a percolator; the liquid was of a reddish-brown color, and had an acid reaction. The greater portion of the alcohol was distilled off, and the remainder evaporated by the aid of a water-bath to the consistence of honey. The residue had a sweetish and very astringent taste. After standing for a few weeks in the capsule, small crystals formed, which were separated, dissolved in a small quantity of water; four times the quantity of alcohol was added to take up the coloring matter, and the solution precipitated with stronger ether. The liquid separated into three layers, the upper one being ether slightly colored; the middle, alcohol containing the coloring matter, and the lower aqueous stratum the sugar. The watery solution yielded crystals which proved to be cane sugar.

The residue from which the crystals were first deposited was dissolved in water, filtered, precipitated by acetate of lead, and filtered; the excess of lead was then removed from the liquid by sulphuretted hydrogen, the filtrate containing glucose, as proven by Trommer's test. The lead precipitate was boiled with water for some time, and filtered;

the precipitate was then treated with acetic acid, and the filtered liquid neutralized by ammonia. The precipitate was then washed with water, suspended in alcohol and decomposed by sulphuretted hydrogen. On evaporating the filtrate, tannic acid was obtained, giving a dark-green color to ferric salts.

Treatment with Cold Water.—The substance, after having been exhausted with ether and alcohol, was dried, and macerated with cold water for four days, and strained; a turbid liquid, of a light-brown color, having a slight acid reaction, was obtained. Much albumen was separated by heat; the concentrated filtrate yielded with alcohol a flocculent precipitate of gum, which was soluble in water and precipitated from this solution by acetate and subacetate of lead.

Treatment with Boiling Water.—The substance, after being exhausted with cold water, was next treated with boiling water, the liquid strained and evaporated to half its bulk; on cooling, it deposited a brown, jelly-like substance, which was insoluble in cold water, and is probably pectin. A small portion of the filtered liquid, treated with iodine, resumed a distinct blue color, proving the presence of starch.

The remaining portion of the liquid was again concentrated to a small bulk, and proved to be free from glucose. The green portion of the stipes treated in the manner described above, gave similar results, but yielded a larger amount of resin, and are, perhaps, as efficient as the rhizomes.

The oleo-resin compared favorably with the best German oleo-resin of male-fern I could get in the city, so far as could be judged by the appearance, taste and odor. Samples of it have been placed into the hands of a prominent physician in this city, who promised to closely watch its effect, and report the result.

Millerstown, Perry co., Pa., Feb. 1st, 1875.

ON GLYCONATED EMULSION OF COD LIVER OIL.

BY T. D. M'ELHENIE, PH. G.

The writer desires to call the attention of the profession to a new combination of this valuable agent. The formula, somewhat modified, is that proposed by Dr. Geo. M. Beard in the "Archives of Elcctrology and Neurology" for May, 1874. I have prepared the emulsion frequently for Dr. Bartlett, of this place, who esteems it highly as a brain and

nerve food, and in an atonic condition of the nervous system. It is well borne by the most delicate stomach; and when well prepared, will keep sweet a long time. Below are given the formula and details which the operator will appreciate after using.

First prepare glyconin ʒxviii by thoroughly triturating in a half-gallon mortar

	Glycerin,	
	Yolk of egg, ...	*aa* ʒix
Then add	Oil of bitter-almond, ...	ʒi

And triturate until the mixture thickens and becomes a creamy yellow.

Prepare a strychnia solution as follows:

Take of	Strychnia sulphate, ...	gr. i
	Distilled water, ...	℥ii
	Jamaica rum, ...	℥iv

Add eight fluidounces of filtered cod-liver oil very slowly to the glyconin mixture, preferably by steady dropping from a vial having a grooved cork, and at intervals add small portions of the strychnia solution.

All this is to be done by active and constant trituration, the success of the process depending upon the fidelity with which this is performed. The finished product will measure about twenty fluidounces, until, by subsidence, the air bubbles have escaped. An incidental benefit to the operator is a superb development of the flexor muscles.

As proposed by Dr. Beard, the mixture contained diluted phosphoric acid. At the request of Dr. Bartlett, I substituted strychnia. He gives the dose, a dessertspoonful, containing 1-64 grain of the salt. Phosphorus in etherial solution, Fowler's solution of arsenic, pyrophosphate of iron, etc., may be readily substituted. The formula, of which this is a modification, appeared in the June number of the "Druggists' Circular."

The "glyconin" without the oil of almonds, soon separates, and with the oil, soon becomes too thick to flow from a wide-mouthed vial.

Experiments, with a view to preparing it in a ready form for all emulsions are thus far unsuccessful, but will be further prosecuted, and the result announced later, if favorable. The writer is disposed to lay stress on the two facts that the above mixture *does not nauseate* and *does not separate*.

The designation "Glyconated Emulsion" may serve a good purpose when, from idiosyncracy, the *name* of cod-liver oil is unpalatable.

Flatbush, L. I., June, 1875.

ELIXIR OF HOPS.

BY J. B. MOORE.

Hops are a favorite remedy with many physicians in various nervous disorders. Both alone and in conjunction with other remedies, it is much employed in the treatment of delirium tremens and the general nervous disturbance and morbid vigilance so often the result of inebriation and debauch.

In the form of elixir, as prepared by the formula presented in this paper, a number of my medical friends have employed it for several years, in the class of cases just referred to, with the most gratifying results.

When carefully prepared by skillful hands, the tincture and fluid extract of hops (the latter not officinal) are both good preparations of the drug; but owing to the bulkiness of hops, which renders their percolation difficult, unless great care is taken, both in reducing them to a powder of sufficient fineness, and also in packing them preparatory to percolation, they will be only partially exhausted. These preparations are, therefore, often liable to be of very uncertain strength. Besides, the very unpleasant taste of the tincture and fluid extract of hops, as that of the same preparations of lupulin, prevents their general use. Many delicate persons cannot tolerate the use of any of these preparations, on this account. This fact evidently calls for a more palatable preparation of the drug. An elixir of hops, therefore, when well made and of sufficient strength, is a very desirable and important preparation. It will enable the physician to avail himself of the use of the drug in many cases where he would otherwise be compelled to forbear its employment.

It is the opinion of many that lupulin is the *only* active portion of hops; but this I believe to be a very great mistake. Lupulin may be the chief, but not the only active part of hops. There are other active and valuable medicinal virtues in hops that are not represented in lupulin.

I here offer a formula for the elixir of hops which I have used for a number of years; it affords an excellent preparation:

℞.	Pulv. Hops, No. 20,		℥ii, troy
	" Cloves, No. 60		
	" Canella, "	*aa.*	ʒi
	" Cinnamon, No. 60,		grs. lxxx
	Oil of Orange (fresh),		fʒiiss
	Sugar,		℥xii, troy
	Alcohol,		
	Water,	*aa.*	q. s.

Mix the powders. Then to twenty fluidounces of a mixture, consisting of ten parts of alcohol and twelve parts of water, add the oil of orange, shake well and moisten the powders with two fluidounces and a half, or a sufficient quantity of the mixture. Set it aside in a closed vessel to macerate for twenty-four hours; then pack it firmly in a *cylindrical* glass percolator, and pour upon it, first the remainder of the menstruum, and, when this has all been absorbed, continue the percolation with a menstruum consisting of ten parts of alcohol and twelve parts of water, until twenty-four fluidounces of percolate have been obtained. To this, in a bottle, add the sugar and shake the mixture occasionally until the sugar is dissolved, then filter through paper.

In the elixir, as thus prepared, the aroma and peculiar bitter taste of the hops are very strongly marked; but the latter so nicely blended with the flavoring ingredients as to be quite agreeable to the palate.

Each fluidounce contains the active properties of thirty grains of hops, which is very nearly half the strength of the officinal tincture.

The usual dose for an adult would be from a dessertspoonful to a tablespoonful every two or three hours, or as necessary.

It is, I presume, hardly necessary for me to say that it is *absolutely* essential that the oil of orange used in making this elixir should be of the *very best* quality and *fresh*. There is hardly an essential oil more unstable than the oil of orange. To keep it sweet for any length of time is almost an impossibility, unless mixed with a portion of alcohol. I am always very careful to select a first-rate oil, and mix it *at once* with an equal bulk of stronger alcohol (as this is a convenient proportion for use) and set it aside in a dark, cool place, and, in this way, I have no difficulty in keeping it a long time unchanged.

When measured for use, it should be vigorously shaken and poured out very quickly to insure exact proportions.

In making this elixir I have tried various strengths of alcohol, but have found the one adopted to be the most satisfactory. It is of sufficient strength to exhaust the hops of their activity, being nearly as

strong as the menstruum employed in making the officinal tincture. Besides, the hops are percolated in the proportion of two troyounces to twenty-four fluidounces of menstruum, and also with the additional advantage of a twenty-four hours' preliminary maceration, while in making the officinal tincture, the hops are percolated in the proportion of five troyounces to thirty-two fluidounces of menstruum.

It is of paramount importance, in all preparations of those drugs which, like hops, are so often prescribed in diseases of the nervous system when the stimulus of alcohol is so frequently injurious, that their alcoholic strength should be kept down to the minimum.

The manner in which the moistened powder should be placed in the vessel for the preliminary maceration not only in the preparation of this elixir, but also in all cases where such preliminary maceration is required, is a practical point of sufficient importance to justify my calling attention to it in this place.

Powders intended for preliminary maceration, after being moistened, are often either thrown loosely into the bottle or other vessel in which the process is to be conducted, or are but loosely packed.

Now, in all cases, and especially when the powders are light and bulky, after they have been properly moistened for preliminary maceration, they should be packed quite *firmly* in the vessel in which they are to be macerated.

This close packing confers two rather important advantages. First, it confines the vapors of alcohol or other menstruum, and often prevents the escape and partial loss of volatile principles, as in the case of the preliminary maceration of wild-cherry bark in making the syrup, &c. Secondly, it keeps the menstruum and powder in close and intimate contact, thus allowing the former to exert more fully and equally its softening, solvent and chemical action, which is desirable in all cases, but highly essential in some; as a type of the latter, wild-cherry bark may be again mentioned.

Whereas, if the powder is carelessly thrown into the vessel or only loosely packed, the menstruum will be found in a short time to have settled to the bottom of the mass of powder with its lower strata, while the upper strata will be found at the end of the maceration almost entirely dry.

Every observing pharmacist must have noticed this in the course of his manipulations; and that this is especially liable to be the case when

such substances as hops, chamomile-flowers, arnica and similar substances are under treatment.

A similar effect to that just mentioned, as occurring in ordinary preliminary macerations, will be experienced when light and bulky drugs are operated upon, in the long preliminary maceration directed in the process of percolation of our present "Pharmacopœia." A few hours after the full compliment of menstruum has been put on and the mass set aside, the greater portion of the alcohol will be found to have settled to the bottom of the mass, while the upper strata will be left almost dry, and, in some instances, so shrunken that the mass is separated from the sides of the percolator, which often very much interferes with successful percolation; for when the remaining portion of menstruum is poured on, after the four days' maceration is completed, it sometimes flows down between the sides of the precolator and the shrunken mass of powder, in consequence of which there is likely to be a serious disturbance and derangement of the powder. This difficulty may, in a slight degree, be overcome by again carefully adjusting the powder by moderate pressure before the addition of more menstruum.

As a consequence of this difficulty, large flakes or portions of the impacted mass often separate from their moorings and rise to the surface of the supernatant liquid. This I have often experienced, to my utter disgust and chagrin.

I feel quite confident that the elixir of hops, as prepared by the process here presented, will prove a very popular remedy with all physicians who become acquainted with its formula. Its palatableness as well as its elegance will commend it to the favor of both physician and patient, and especially to those of the former who are sagacious enough to consult their own as well as their patient's interests, by prescribing pleasant remedies.

My opinion is that we cannot have too many palatable remedies, especially when the formulas for their preparation are accessible to the entire craft, and are open to the inspection of physicians, who can have an opportunity of judging of their therapeutic merits.

Every pharmacist who improves the taste, appearance and general elegance of any medicinal agent without impairing its medicinal virtue, is a real benefactor of his race, and deserves, even if he does not receive, the blessing of every invalid, man, woman and child on the face of the earth. It is only when we are sick that we can appreciate the great blessing of agreeable remedies.

The sugar-coated pill, the palatable "elixir," the nicely-flavored mixture, may be of little account to the well, but to the sick they are, I can assure my readers, a *precious boon*.

In a future paper I shall make some further comments upon the question of "Elixirs" and "Elegant Pharmacy," and the interest of medicine and pharmacy involved in the question.

Philadelphia, May, 1875.

ELIXIR OF PAULLINIA OR GUARANA.

BY GEORGE W. KENNEDY, PH. G.

Guarana, which is prepared from *Paullinia sorbilis*, derives its name from a tribe of aborigines, called "Guaranis," who, it is said, used it as a corrigent of their vegetable diet. Within the last few years it has received considerable reputation for the cure of the various forms of headache, and the credit it has attained appears to be confined to a few places. There are but few physicians and apothecaries who know more of it than its name. I believe it is better known in the Southern and Western States than in other sections of the country. My attention was first attracted to it six or seven years ago in one of our Southern cities, where the writer then resided, and where it was used by the people for the cure of nervous and sick-headaches and other nervous disorders, with good success, the residents there regarding it as a specific for those afflictions. Unfortunately, the apothecaries were forced to sell what was called guarana, put up as a proprietary article by a firm known by the name of Grimault & Co., *Paris, France*, and sold at the enormous price of a $1.50 per box, each box containing about a dozen small powders. At that time guarana was very scarce in the American market, or, in all probability, it would have been sold in a different shape, and not as a proprietary article.

Of late years, guarana or paullinia has been more plentiful, larger quantities of it have been imported, owing to the increasing demand; but still Grimault & Co.'s guarana sells at the exorbitant price of $1.00 per box. If there is still the same demand South for this proprietary article as there formerly was, pharmacists should discountenance and discourage its sale, and introduce, if possible, the commercial *Paullinia*.

When the writer first became acquainted with it, as possessing medicinal properties, it was used by a class of people who knew the dose,

whence it came from and its therapeutic properties. It seems then that there would be but little trouble experienced in the introduction of *Paullinia* of commerce by the apothecaries, in place of the above-named nostrum, and, at the same time, the consumer would be better satisfied, knowing that he was taken guarana and saving from 300 to 400 per cent. Perhaps, if a chemical examination was made, it might be found to contain but little guarana, and, in some respects, resemble cinchoquinine, which tried hard to live and be brought into general use; but the analysis, by Professors Diehl and Scheffer, was too much for it; it received such a severe blow that it is impossible for it to survive. If the results of such investigations were spread throughout the land, and published in the medical and pharmaceutical journals, physicians would become acquainted with the true composition of such nostrums, disapprove of their use, and they would be dropped and buried forever.

Paullinia acts as a nervine, owing to the large quantity of caffeina it contains. Dr. Stenhouse found caffeina to be more abundant in *Paullinia* than in any other vegetable. He obtained 5·07 per cent. from *Paullinia*; from good black tea, 2·13; from coffee, 1·00 per cent., and 1·2 per cent. from Paraguay tea ("Pharm. Journ.," xvi, 213). My object here is to frame a formula for an elixir of guarana or paullinia, which has been prescribed in our town by a few practitioners with very good success for nervous headache. Frequently physicians are misled in their experiments for ascertaining the value of a remedy, by prescribing other medicines with the one under trial, and giving the credit of the cure to the new remedy, when it was, perhaps, due to the medicine associated with it. But the elixir of guarana was prescribed alone, and, in many cases, gave instant relief; it was made by the following formula:

Take of Paullinia,	℥iv
Alcohol,	f℥vi
Water,	f℥vi
Glycerin (pure),	℥iv
Oil of Orange,	gtt. viii
Oil of Ceylon Cinnamon,	gtt. i

Diluted alcohol, a sufficient quantity.

Reduce *Paullinia* to a fine powder, mix 5½ ozs. alcohol with the glycerin and water, moisten the powder with this mixture and pack in a glass funnel or a conical glass percolator; pour on the balance of the glycerin mixture, and, when this ceases to pass, add sufficient dilute

alcohol, till the percolate measures 15½ ozs., then add the oils to ½ oz. alcohol, dissolve and mix with the percolate. This makes a beautiful reddish-brown colored and very palatable preparation, each teaspoonful of which represents the active constituents of 15 grains of paullinia.

Pottsville, Pa., May, 1875.

GLEANINGS FROM THE EUROPEAN JOURNALS.

BY THE EDITOR.

Clarification of Alcoholic Solution of Shellac.—One part of shellac yields, with 6 parts of 90 per cent. alcohol, a solution which is turbid from suspended wax. If the solution is agitated with 6 parts of powdered chalk, the greater portion becomes transparent, and the white sediment is readily filtered through paper or felt. If three parts of the turbid shellac solution are agitated with one part of petroleum benzin, the mixture soon separates into a light-colored benzin solution of wax, and into a clear, yellowish-brown solution of shellac in alcohol. Shellac thus purified, is left behind, on the evaporation of the alcohol, as a brittle mass; but on adding to the alcoholic liquid from one to three per cent. of Venice turpentine, no brittleness is observable.—*Phar. Cent. Halle*, 1875, *No.* 17, from *Phar. Zeit. f. Russl.*

Removal of Fusel Oil and Clarification of Liquors.—Franz Plattner has patented, in Germany, the following process for the above purpose: 8 litres of the liquor, tincture, elixir, etc., are agitated for a while with a mixture of 30 grams pure starch, 15 grams finely-powdered albumen and 15 grams of powdered milk-sugar. After 24 hours the liquid will be found free from all fusel oil, of a brilliant transparency, and greatly improved in taste.—*Ibid.*, from *Polyt. Notizbl.*

Amberyellow (*Anactinic*) *Glass* is extensively used in Europe, for the preservation of salts of silver, mercury, etc., as well as for the windows of photographers' dark closets. Such a glass is obtained handsomer and more brilliant in color than by metallic oxides, by the use of cowdung, in the proportion of 60 parts of the mixture for colorless glass to one part of dried and sifted cowdung.—*Ibid.*, No. 19, from *Sprechsaal f. d. Glas-u. Thonw.-Ind.*

Oil of Orris (*Odeum Iridis Florentinæ*) was, until receently, manufactured in Paris, and at present by Schimmel & Co., of Leipzig. According to Hager it has the following properties: At the ordinary

temperature it is a pea-yellow solid, resembling the basilicon ointment ("Phar. Germ.") in color and consistence. It is lighter than water, fuses at 38° to 40° C. to a transparent liquid, and commences to congeal at about 28° C. Two drops of the fused oil dissolve in 10 or 12 drops of warm stronger alcohol, and the solution does not separate at a medium temperature. Three drops of the oil and 20 to 25 drops of concentrated sulphuric acid carefully heated to 30° C., yield a clear red-brown liquid, which, after ten minutes, dissolves in 7 c c. of 90 per cent. alcohol, with a light violet color, gradually becoming darker. Two drops of a solution of the oil in petroleum benzin evaporated spontaneously leave a residue, which, with a magnifying power of 50 to 100 diameters has a ramifying appearance after a few hours, and shows distinct crystals after a day. One part of oris oil yields, with 3,000 to 4,000 parts of weaker alcohol, a solution of which a few drops put upon a handkerchief develop a persistent odor of violet.—*Ibid.*, No. 19.

Purification of Salicylic Acid.—Dr. A. Rautert found that salicylic acid volatilizes with steam of 170° C. undecomposed, and succeeded in purifying the yellow acid as obtained by Kolbe's process in the following manner: A cylindrical copper kettle is surrounded by another cylinder containing paraffin heated to 170° C.; the kettle is charged with about 2 lbs. of salicylic acid, over which steam is made to pass, after having been heated to 170° C. by passing it through a leaden coil immersed in a paraffin bath of this temperature. The exit tin pipe of 3 centimetres bore passes through a Liebig's condenser and is cleared from the condensing acid by a long glass tube, or stick of well boiled pine wood. Towards the close of the operation the temperature of both paraffin baths is raised to 185° C. Very little black resinous residue remains in the kettle; the distilled acid has a faint odor of carbolic acid, from which it is freed by crystallization from boiling distilled water, when it is obtained in beautiful snow-white crystals. Common water and ordinary filtering paper would impart, by their iron, a reddish color. The operation is finished in about two hours.

Steam under a pressure of 5 atmospheres, having a temperature of 160° C., volatilized but traces of salicylic acid; under a reduced pressure, however, the distillation could most likely be effected at a lower temperature.—*Ibid.*, No. 20, from *Polyt. Notizbl.*

Detection of Fusel Oil in Alcohol.—5 c.c. alcohol are mixed with 6 or

7 times this volume of water and then agitated with about 20 drops of chloroform, which, after spontaneous evaporation, leaves the fusel oil, recognizable by its odor, and by that of its ether when treated with a little sulphuric acid and potassium acetate. 1-20 per cent. of fusel oil is said to be thus detected in alcohol.—*Chem. Cent. Bl.*, 1875, No. 15, from *Ber. Chem. Ges.*, VIII.

New Uses of Salicylic Acid.—F. Mohr observed that a small quantity of salicylic acid dissolved in a hot solution of starch will preserve the latter for analytical purposes. A similar influence is exerted by salicylic acid upon solutions of tartaric acid and of sulphate of quinia. *Zeitschr. f. Anal. Chem.*, 1875, No. 79.

Lead in chlorate of potassium has been repeatedly detected by A. Hilger. Its presence is readily proven by the black precipitate with sulphuretted hydrogen, and the yellow precipitate with chromate of potassium. Its complete removal is effected by repeated crystallization from water.—*Archiv d. Phar.*, 1875, May, p. 391.

Iodine in nitric acid is best detected, according to A. Hilger, by agitating the acid with sulphide of carbon, which will assume a violet coloration. If no color is imparted, some rasped tin is added, by which iodic acid is reduced to iodine, and the carbon sulphide colored.—*Ibid.*, 392.

Sulphurous and arsenious acids in muriatic acid are detected by a weak solution of iodine which is decolorized thereby. On the addition of some pure zinc to the acid, the evolved hydrogen will impart a black color to paper moistened with solution of silver nitrate. On the other hand, barium chloride is added to the muriatic acid, the liquid filtered from the precipitate occurring if sulphuric acid had been present, and iodine solution added, whereby sulphurous acid will be oxidized to sulphuric acid, and thus occasion a precipitate with the barium salt. A. HILGER.—*Ibid.*, p. 393.

New Reagent for Brucia.—If an aqueous solution of brucia salt is mixed with solution of mercurous nitrate free from excess of nitric acid, no coloration occurs in the cold; but by the heat of a water-bath a carmine color is produced, which gradually becomes more intense, and is permanent after evaporation to dryness.

Strychnia, the alkaloids of opium and cinchona, veratria, coffeina and piperina are not colored under the same circumstances. A similar behavior is shown by albumen and phenol, of which the former is

always removed during the isolation of the alkaloids, and the latter changes its red color soon into brown.

Acetate of strychnia is mostly decomposed on evaporating its solution, while brucia acetate is scarcely affected; the residue, treated with water, will yield to this solvent mainly the brucia salt, with little strychnia, the latter being precipitated in needles by cobaltocyanide of potassium, the cobaltocyanide of brucia being more soluble in water.—F. A. FLUCKIGER.—*Ibid.*, p. 403.

Philodermine, a nostrum prepared by Demarson, Chetelat & Co., of Paris, is, according to G. Krause, a flavored mixture of lard and cocoanut oil, to which some sulphur, exsiccated ferrous sulphate and magnesia has been added.—*Ibid.*, p. 406.

ON FLUORESCENCE AS A MEANS OF DETECTING ADULTERATION.*

BY CHAS. R. C. TICHBORNE, PH. D., F. C. S.

The following note will be interesting as illustrating how the fluorescence of any substance may be used for its detection in the presence of a non-fluorescent substance:

About seven years ago, I made use of this phenomenon for the detection of turmeric when present in mustard in a report upon the commercial aspect of that substance. †

Lately it has been referred to by one of the public analysts in England, as a method by which turmeric may be detected, and as it is so extremely delicate in its results, and yet so easy of application, I have thought it desirable to draw attention to the general principles upon which this phenomenon of fluorescence may be used for such purposes, and also with the view of laying claim to the idea.

If the adulterant is fluorescent, and the substance into which it is introduced in non-fluorescent, we have at once a ready means of examining any number of samples with much more delicacy than the usual chemical reactions will give. Thus, let us take the one to which we have already referred, the mustard of commerce.

The seeds of the black or white mustard yield a yellow, coloring

* Reprint from the Proceedings of the Royal Irish Academy, communicated by the author.

† *Medical Press and Circular.*—Report on the adulteration of mustard. Vol. 3. New series.

matter soluble in spirit of wine, which is devoid of flourescence. Turmeric is always present in the inferior qualities of this condiment, because the actual adulterant is wheaten flour or rice, the turmeric being necessary to bring the white adulterant up to the same shade as the ground mustard seeds, therefore, the samples vary from 0·5 per cent. to 0·05 per cent. of turmeric. Now, with such minute quantities of turmeric, the alkaline test is very unsatisfactory—in fact, all chemical reactions are unsatisfactory when dealing with such a minimum of adulteration.

But the great elegance of this fluorescent test consists in the fact, that within reasonable limits, *the more dilute the solution*, *the more strongly* does the fluorescence test come out. The non-fluorescence of the coloring matter of all substances that are adulterated with a fluorescent substance should, in the first instance, be exactly and scientifically determined. This is easily done by any one who has the necessary arrangements. In the case of the mustard yellow, Mr. H. Draper kindly examined it for me, by the light of the spark formed between two steel wires (such a spark being the best for the purpose).

The steel points were placed in connexion with a four-inch intensity coil and a small Leyden jar was interposed in the circuit. The battery used consisted of three Groves elements. In examining by this method, ordinary glass vessels must be discharged, because even the strongly marked fluorescence of turmeric is more or less masked by the blue fluorescence of the glass.

In a quartz cell (two plates of quartz in a frame of gutta percha), these observations can be carried on with the greatest accuracy. Mr. Draper's observations prove that, whilst the coloring matter of the true seeds gave no fluorescence, the presence of so small a quantity of turmeric as ·005 per cent. could be readily detected.

Before we are justified, however, in using this phenomenon as the test for the presence of any substance, it is necessary to put it to a crucial examination, such as that detailed above to find out how far the particular substance under examination is capable of giving fluorescence. But it is not at all necessary that we should sumbit it to the light of a spark in the practical application of the test. The fluorescence of an ordinary white glass flask is not observable under the ordinary diffused light of a laboratory, but the ordinary fluorescent substances (so called), are easily recognized under such conditions. It is only necessary, therefore, to form a tincture of the substance to be examined. The obser-

vation of Mr. Horner, * who finds that fluorescence is wonderfully developed by castor oil, may be made use of with great advantage. A drop of castor oil that has been passed through adulterated mustard, upon a filter, appears green when dropped upon a black plate in ordinary daylight. If the mustard is pure, no coloration will be perceived. I have met with some specimens of "Saffron," (the stigma and style of *Crocus sativus*), which give a fluorescence. They were evidently adulterated because the flowers of saffron give no fluorescence. This saffron is a most expensive drug, and is therefore very liable to adulteration.

LABORATORY NOTES.

BY A. B. LYONS, M. D.

Solution of Iodo-Bromide of Calcium Compound.—The following are the results of a chemical analysis we have recently made of this preparation:

One hundred parts contain:

Calcium,	8·72	Chlorine,	20·35
Magnesium,	1·35	Bromine,	0·95
Sodium,	1·20	Iodine,	0·20
Potassium,	a trace.	Silicic acid,	not estimated.
Aluminum,	a trace.	Organic matter,	not estimated.

One fluidounce therefore contains, approximately:

Chloride of calcium (anhydrous),	142 grains.
Chloride of magnesium,	30 "
Chloride of sodium,	18 "
Bromide of magnesium,	6 "
Iodide of potassium,	1½ "
Total mineral constituents,	200 "

Iron, which is mentioned on the label as one of the constituents, was not detected in the sample examined.

The quantities of iodine and bromine were not determined with rigorous exactness, but the figures given are above rather than below those which exact analysis would yield.

The bromine is assumed, on theoretical grounds, to be in combination, in the solution, with magnesium. Of course, the efficacy of the preparation would not be affected by substituting bromide of sodium for the bromide of magnesium in making up an artificial iodo-bromide, and the physician would have the satisfaction of knowing exactly what

* "Philosophical Magazine," September, 1874.

he was prescribing, and the option of varying the amount of any of the constituents, if it should seem desirable. The proportion of bromine and of iodine might be somewhat increased without rendering the prescription a very expensive one; as it is, five cents a bottle would be about a reasonable price for materials. Whatever is paid over and above this sum must be considered a tribute to the genius of the intellect that originated a combination of such extraordinary merit as to draw from reputable (?) physicians all over the land testimonials to its worth.

The elixir of iodo-bromide of calcium compound contains the same ingredients as the solution of ditto ditto, and apparently in about the same relative proportions. We have not made, however, a quantitative analysis, being content with a demonstration of the fact that the amount of iodine and bromine in this preparation is not greater than in the simple solution. The principal difference seems to be that this contains a relatively small proportion of the mineral ingredients, with the addition of sugar, licorice, sassafras, and other flavoring ingredients, and, possibly, of some sarsaparilla, cundurango, or other powerful vegetable alterative.

Bromo-Chloralum.—We have long ago expressed the opinion that the preparation sold under this rather pretentious name is essentially a chloride of aluminum. The following are the results of an analysis sufficiently exact for any practical purpose:

One hundred parts of bromo-chloralum contain:

Calcium,	2·11	Chlorine,	10·84
Aluminum,	1·84	Bromine,	0·25
Magnesium,	0·07	Sulphuric acid,	0·09
Sodium,	0·43	Silica,	not estimated.
Potassium,	a trace.	Organic matter,	a trace.
Iron,	a trace.		

One fluidounce therefore contains, approximately:

Chloride of aluminum,	45½ grains.
Chloride of calcium,	28 "
Bromide of magnesium,	1½ "
Chloride of sodium,	5 "
Sulphate of calcium,	1 "
Total mineral constituents,	82 "

Fluid Lightning.—Under this name there is sold, at the exorbitant price of a dollar for a half-ounce vial, a preparation reputed to have extraordinary virtue in subduing pain. A few drops of the liquid are placed in the palm of one hand, and applied over the seat of pain, while

the other hand is applied in a similar way to the nape of the neck. In a few seconds there is experienced a pricking sensation, which is said to be caused by an electric current. This increases in intensity till it becomes, sometimes, almost insupportable, then, after five minutes or so, passes away, leaving a sensation of coolness in the part, and frequently taking away the pain completely.

On examination, the preparation proved to be simply alcohol containing a small quantity (about ten drops to the ounce) of *essential oil of mustard*, together with some oil of sassafras and oil of peppermint. It is well known that many of the essential oils have decided anæsthetic powers; the oil of peppermint, especially, is a common ingredient in the pain annihilators that are vended about the country. The oil of mustard produces a powerful counter-irritant effect, which is useful not only for the relief of pain, but to secure a ready sale for an article whose powerful positive effects can be so easily demonstrated. Large quantities of the essential oil of mustard are now sold by the wholesale dealers, and doubtless made use of in compounding nostrums similar to this.

The profession may, perhaps, take a hint from this, and add to the list of recognized therapeutic agents one which has been hitherto neglected, but whose virtues are unquestionable.

Sugar-Coated Quinine Pills Once More.—L. C. Hogan, in the "Pharmacist," publishes the results of an assay made by him of samples of the sugar-coated quinine pills from eight prominent manufacturers. We regret to observe that the showing is not more favorable for the manufacturers than was that of our own assay, published last year in the "American Journal of Pharmacy." To Mr. Hogan's list we add two more assays of our own, the first of two-grain, the second of one-grain pills, in which the economy of quinine is most instructive.

The following are the tabulated results of the several assays:

	Gross Weight of one 2-grain pill.	Weight of pill after coat was removed.	Quantity of quinia in five 2-grain pills.	Quantity of quinia sulph. in five 2-grain pills.
Standard.		2·3	7·4	10·00
1	4·2	2·1	6·85	9·22
2	5·2	2·4	6·65	8·98
3	4·6	2·3	6·6	8·91
4	4·	2·	5·73	8 19
5	4·05	2·5	5·56	7·63
6	3·25	2·5	5·35	7·22
7	3·4	1·8	4·55	6·32
8	4·25	1·8	3·78	5·56
9	3·6	1·85	. . .	5·93
10	2·35x2	0·815x2	. . .	5·2

No. 5 contained considerable cinchonia; Nos. 8, 9 and 10 yielded a strongly colored solution, containing some cinchonia, and in Nos. 9 and 10 cinchonidia in considerable quantities. The quinine was evidently impure. No. 4 dissolved with much difficulty, and required a large amount of ether to take up the precipitated alkaloid. The pills were probably overheated in coating.

With these exceptions, the quinine employed in making the pills seem to have been of unexceptional quality, and only deficient as to quantity.

A recent assay of the pills of one manufacturing firm, which in my first experiments I found to contain but three-fourths of the quantity of quinine claimed by the label, yielded more satisfactory results, the quantity being now fully up to the standard. These pills also seem to have been overheated in the process of manufacture; they dissolve pretty readily, but the quinine will scarcely crystallize from a neutral solution in water containing fifteen grains to the ounce.

We do not intend to let this subject rest here. As soon as the facts can be brought together, we propose to publish the results of assays of sugar-coated pills from all the prominent manufacturers, *giving their names*, which have hitherto been suppressed. It is time that manufacturing pharmacists be made to realize that honesty for them is the best policy.—*Detroit Review of Phar. and Med.*, June, 1875.

SOLUBILITY AND DISSOCIATION OF THE ACID CARBONATES OF POTASSIUM, SODIUM AND AMMONIUM.

BY H. C. DIBBITS.

The loss of carbonic acid when solutions of these salts are exposed to the air has long been noticed. A portion of the salt appears to be decomposed in the solution, and as the carbonic acid passes off, fresh quantities of the salt are successively decomposed, until the whole is transformed finally into the neutral carbonate. In a closed vessel the carbonic acid first set free tends by its presence to hinder the further evolution of the gas, and the decomposition is arrested with a completeness dependent on the pressure. On the other hand, if the layer of gas above the surface of the liquid be constantly removed, either by keeping the vessel in a vacuum or by passing a stream of air through the solution, the salt will be more rapidly converted into neutral carbonate. Hence crystals of the acid carbonates of potassium and sodium

should be dried over sulphuric acid in an atmosphere of carbonic acid gas; otherwise they become covered with a layer of neutral carbonate, which is recognizable in the analysis of the salt by the deficiency of carbonic acid.

As in the determinations hitherto made of the solubilities of the potassium and sodium acid carbonates, the loss of carbonic acid from the crystals and from the solutions has not been taken into account, the author has undertaken these determinations afresh with samples of the pure salts, of which he describes the preparation, and operating in vessels securely corked, in which the decomposition of the salt in solution is arrested by the pressure of the carbonic acid gas. He has also found the percentage of carbonic acid set free at various temperatures, and has determined the solubility of ammonium acid carbonate, which decomposes with much greater readiness than the other two, the pressure of the carbonic acid extricated from a saturated solution at 30° being so great that determinations of the solubilities at higher temperatures could not be made, while in the case of the other two salts the determinations were carried to 60°. The tensions of the gas liberated from saturated solutions of the three salts at 15°, roughly measured in millimeters of mercury above the atmospheric pressure, were, for the sodium, potassium and ammonium acid carbonates, 120, 461 and 720 respectively. The ammonium salt was prepared by the author, by placing the crystals, after pressure in bibulous paper, in an exsiccator filled with air, over sulphuric acid and caustic soda. After some days all the water, free ammonia and carbonic acid were completely absorbed, and the pure salt remained behind.

The following table, calculated from the author's determinations of the solubility of the three acid salts in water, exhibits the solubility of the potassium and sodium salts for every five degrees of temperature from 0° to 60°, and of the ammonium salt from 0° to 30° C.:

Solubility in 100 *Parts of Water.*

Temp.	$KHCO_3$.	$NaHCO_3$.	$(NH_4)HCO_3$.	Temp.	$KHCO_3$.	$NaHCO_3$.
0°	22·45	6·9	11·9	35°	42·05	11·9
5	25·0	7·45	13·7	40	45·25	12·7
10	27·7	8·15	15·85	45	48·6	13·55
15	30·4	8·85	18·3	50	52·15	14·45
20	33·2	9·6	21·0	55	55·9	15·4
25	36·1	10·35	23·9	60	60·0	16·4
30	39·0	11·1	27·0			

—*Journ. of Chem. Soc.* [*Lond.*], May, 1875, from *J. pr. Chem.* [2], x, 417–443.

EXTRACTION OF CRYSTALLIZED DIGITALIN.

BY C. A. NATIVELLE.

Leaves of digitalis should be gathered from two-year old plants when beginning to flower, the stalks and midribs being discarded, as these parts contain very little digitalin. For analysis 100 grams may be used, but with care 20 grams will be sufficient. On a larger scale the following is the method employed:—1,000 grams of the leaves are reduced to a fine powder and added to 250 grams of neutral lead acetate dissolved in 1,000 grams of distilled water. The mixture is passed through a sieve and allowed to stand for 24 hours with occasional stirring. It is then allowed to settle and the subsided mass exhausted with alcohol of 50° until all bitterness ceases. To this liquid a saturated solution of 40 grams of sodium bicarbonate in cold water is added; and after the effervescence has ceased, the alcohol is distilled off, the residue evaporated in the water-bath to 2,000 grams, and then diluted with its own weight of water. Two or three days afterwards the clear liquid is siphoned off, and the precipitate passed through a linen strainer and pressed. The precipitate is suspended in 1,000 grams of alcohol of 80° and strained through a metallic or fine linen sieve; the turbid liquid is raised to ebullition, and a solution of 10 grams of neutral lead acetate added; the ebullition is continued for some minutes and the liquid then cooled and filtered, the percipitate being thrown on the filter and squeezed; 50 grams of finely-powdered vegetable carbon, washed with acid and quite neutral, are then added; the alcohol is distilled off; and the residue, after being heated for some time in the water-bath to drive off the last traces of alcohol, is strained through a sieve. The carbon residue is dried and exhausted by displacement with pure chloroform until the washings are colorless, and the liquor is distilled and evaporated to dryness. The residue is crude digitalin mixed with pitchy matter and oil. It is dissolved, with gentle heat, in 100 grams alcohol of 90°, 1 gram of neutral lead acetate dissolved in a little water is added, together with 10 grams of washed animal charcoal in fine grains, without powder; the mixture is boiled for 10 minutes and cooled, then allowed to settle, and filtered through cotton wool, the carbon deposit being last thrown on the filter; this deposit is exhausted with alcohol, and the alcohol is distilled off, whereupon, the digitalin is left as a clotted, crystalline mass, contaminated only by colored oil. To obtain a white product, the mass is dissolved by heat in 8 grams of alcohol of

90°, and the solution agitated with 4 grams of ether and 8 grams of water. The ether does not separate, and the mixture is allowed to rest in a cool place during the night. The next day nearly the whole of the digitalin (about four fifths), will be found deposited in white needle-shaped crystals, which are to be thrown on a filter and washed with ether. The crystals may be further purified, if necessary, by treatment with alcohol and animal charcoal as before.—*Jour. Chem. Soc.*, March, 1875, from *J. Pharm. Chim.*, [4], xx, 81–87.

SOLID AND LIQUID JAPANESE OIL OF PEPPERMINT.*

BY JOHN MACKAY.

Early in the present session some remarks were made at one of the evening meetings in London by Mr. Moss, F. C. S., on Japanese oil of peppermint.

The subject appeared to me to be of considerable interest, and I made efforts to obtain specimens of both liquid and solid oils. These are now on the table, and have been kindly supplied by the same parties (Cyriax & Farries) who gave them to Mr. Moss. As I am permitted to dispose of them in any way I think fit, it gives me much pleasure to hand them over to our museum.

Let me now place before you the principal facts known about these oils, chiefly derived from the paper already referred to and other sources:

1. The oils appear to have come over from Japan in cylindrical tin canisters, and up to the present time the quantities received in this country have not been intended for sale, being small, and sent more for curiosity and for specimens.

2. The solid portion, though called crystallized oil of peppermint, appears to be simply a deposit from the original liquid oil, probably at a low temperature.

3. About thirteen years ago a memoir on crystallized oil of peppermint was presented to the London Chemical Society by Oppenheim. This chemist speaks of the article as coming over here in considerable quantity, adulterated to the extent of 10 or 20 per cent. with sulphate of magnesium. In this statement, however, there seems to be some error, because, after many inquiries, no traces can be found of this

*Read at a meeting of the North British Branch of the Pharmaceutical Society of Great Britain, March 26th, 1875.

article being known as an article of commerce, while it was equally unknown to chemists. In regard to adulteration, there is no resemblance between the two substances—I mean the one referred to by Oppenheim and that now under notice—because, though the crystals do resemble in appearance the so-called adulterating substance, there is not the slightest trace of its presence, a chemical examination indicating that the deposition is as pure as the oil from which it has been thrown down.

4. Dr. Attfield refers to peppermint camphor under the name of menthene, believing it to be the hydro-carbon found more or less in nearly all varieties of peppermint oil.

5. From the numerous experiments which have been made, such as the fusing and boiling point, solubility (though very sparing) in water, ether, alcohol, bisulphide of carbon, fatty and essential oils, etc., it appears that the substance now shown is in all respects identical with that submitted by Oppenheim in 1862 to the Chemical Society, but free from any adulterating ingredient.

6. Dumas, as well as Oppenheim, appears to have operated on peppermint camphor. The result of his examination corresponded with that of Oppenheim and Attfield. Dumas used the crystals obtained from some variety of American oil, and found the formula to be $C_{10}H_{20}O$, precisely the composition given by the other chemists, and further confirmed by Mr. Hanbury in his "Pharmacographia."

So much for the solid oil and its known history. Before remarking further on its solubility, or comparing it with the liquid, let me notice the use to which a similar, if not the identical preparation, has been, and is, I understand, still put to in some foreign countries.

About five years ago Dr. A. Wright communicated to the "Lancet" that when in China he became acquainted with the fact that the natives, when suffering from facial neuralgia, applied oil of peppermint to the seat of pain by means of a camel-hair pencil, and with decided success.

In 1871, Mr. D. Hanbury stated in the "Pharmaceutical Journal" that oil of peppermint was distilled at Canton, though unacquainted with the plant used for its production.

Some months thereafter Prof. Flückiger referred to a notice which had appeared in the "American Journal of Pharmacy" confirming the use by the Chinese of the oil in neuralgic cases, stating, further, that the oil was much used for this purpose in San Francisco and elsewhere, the oil being put up in small ℥ss bottles, and sold as "Chinese Med-

icine." For this small quantity one dollar was charged, and the label had printed on it "*Fook-chang-Yong*," with the name of the seller. Prof. Flückiger believed the specimen he saw to be good American or English oil, although the dealers in San Francisco declared it to be imported direct from Canton, which, of course, it might have been. A few drops of this oil Prof. Flückiger placed on a glass slide, and in a few hours it yielded crystals of camphor in all respects similar to those he had observed in the Japanese oil. So far, then, as we know, there is but little difference between these two foreign oils, Chinese and Japanese, although it is alleged that in California the former becomes solid in cold weather, while the American or English as a rule do not alter, although in some kinds of oil there may be separated, when subjected to cold, a portion of camphor. The following is what appears on this subject in the "Pharmacographia," by Professor Flückiger and Mr. D. Hanbury:

"When oil of peppermint is cooled to 4° C. it sometimes deposits colorless hexagonal crystals of peppermint camphor $C_{10}H_{18}+H_2O$, called also menthol. This camphor, the deposit of which in the oil we have not observed, boils at 210° C. and possesses the color of the crude oil. The properties of menthol contained in oils of different origin is very variable. Pure crystallized menthol is sometimes found in commerce under the name of Chinese oil of peppermint."

There can, therefore, be very little doubt that menthol, a solid Chinese oil of peppermint, resembles in all its properties the solid portion of Japanese oil, obtained in all probability by submitting the oil to a low temperature, by which all the solid portion is obtained. Nor can it be doubted that chemically this menthol closely resembles, nay, is in all respects the same as the peppermint camphor obtained from our own or American oil, and that in fact both may be named a monatomic alcohol, menthylic alcohol, or hydrate of menthyl, being, as already stated, represented by $C_{10}H_{18}+H_2O$.

In connection with the use of the oil of peppermint in neuralgic cases, I received the following note from Messrs. Frazer & Green, of Glasgow, which will tell its own tale. I may premise the note was written in consequence of receiving one of the circulars announcing that this paper was to be read:

113 Buchanan Street, Glasgow, March 25th, 1875.

John Mackay, Esq.:

Dear Sir,—We had an order some weeks since for three bottles of medicine, which we have now no doubt but that it is the Japanese liquid oil of peppermint.

Our customer could give no name; he gave us a small flat bottle with a label printed in Chinese-looking characters, the bottle being enclosed in a small paper box. We tried London, and could hear of nothing like it except at Messrs. Savory & Moore's, but theirs is the *solid* article. Our customer wishes the liquid. It is used for neuralgia—a drop being rubbed on the affected part. Our order is for three bottles. Can you help us in the matter?

Yours truly, FRAZER & GREEN.

The following are a few characteristics of the liquid Japanese oil:

It is soluble in any quantity of ordinary spirit of wine, 56° O. P., and at ordinary temperatures.

The mixture I now submit contains one part of the oil in eight parts of rectified spirit. It dissolves very readily in any proportion and makes a clear solution, and that now shown will give some idea of its behavior when employed for making the common essence. In comparison with this, I now place two others, one is made from good American, and the other from Mitcham oil of peppermint, and in exactly similar proportions. For strength, flavor and aroma the English is undoubtedly the best, then follows the Japanese, and lastly the American.

The liquid oil has the power of dissolving the solid or crystalline oil. With the aid of a gentle heat the proportions are one to four. Here is such a solution, and although no deposition of crystals has taken place in cooling, I have no doubt if submitted to cold, the crystals would be regained.

The solid oil is also capable of solution in ordinary spirit in the proportion of one to two, and without the aid of heat, simply by rubbing in a mortar. I submit such a solution, but it will not compare in point of flavor with the fluid oil. In order that they may be fairly tried, I have added some spirit, so as to make the strength one to eight, as in the other solutions.

Of course, one of the most important elements in connection with this subject is the cost of the oil as compared with others in the market. As I have already stated, the small quantities as yet sent over are more for samples, and as something rare, than for sale. The firm already referred to have, however, written me that 70 lbs. weight of each kind are coming over soon, and they promise when this lot does arrive to give me notice, stating the commercial value of solid and liquid. As their memorandum bears date of 13th March, we may expect ere long to know price and value.

I mav further state that, in submitting the solid oil to heat, it melts

at a temperature of about 100° F., but on cooling it resolidifies. Of this you have a fair example in what I now show in the test-tube.

Both the samples seem to me quite free from any adulteration whatever, and specially so from the turpentine smell, which many of the foreign oils of peppermint have. The solution of the solid oil, though pungent to the palate, is disagreeable and wanting in the aroma and flavor which all fine peppermint oil possesses in such a remarkable degree.

If moderate in price and supplied in sufficient quantities, I think it very likely that the liquid Japanese oil may come into demand for confectionery and other purposes, as the samples of liquid oil now submitted give fair promise of the Japanese becoming a competitor with any other English or American oil at present to be found in the market.—*Pharm. Journ. and Trans.* [*Lond.*], April 17, 1875.

VANILLA.

BY JOHN R. JACKSON,
Curator of the Museums, Royal Gardens, Kew.

Vanilla, now seldom, if ever, used in medicine, has an amount of interest attached to it owing to its natural affinities, early history, commercial value and uses, that may render some notes on the subject worth recording.

There has lately been issued from the French press a pamphlet of some fifty odd pages, devoted entirely to the consideration of the vanilla plant in all its bearings. Considering, however, that the author is a member of the Chamber of Agriculture of Reunion, a good deal of the book is devoted to vanilla as a product of that island. Nevertheless, it is a valuable addition to the literature of the subject. Its title is "Étude sur la Vanille" par A. Delteil.

How many, and what are the exact species of vanilla which furnish the commercial article, has always been a question amongst authors ever since that genus itself has been known. It will be well, however, to trace the history of vanilla and then to point out the opinions of more recent writers. The plant being, as is well known, a member of the *Orchidaceæ*, was pretty fairly described by the old writers. Thus Pomet says, in his "Compleat History of Druggs," that the pods or cods of about half a foot long, of the thickness of a child's little finger, hung upon a plant of twelve or fifteen feet high, that climbs like

a creeper; for which reason they grow most frequently upon walls or at the roots of trees, or else upon props or the like where they are supported. They have round stalks, disposed in knots like the sugar cane; from each knot there puts forth large thick leaves, about a finger's length, which are as green as the stalk, and fall off or wither away, as the great plantain does, after which come pods that are green at first, yellowish afterwards, and grow browner according as they ripen."

Originally a native of Eastern Mexico, it was in early times used by the natives to flavor their chocolate. It was brought to Europe by the Spaniards, but little seems to have been known about it or its uses till the middle or perhaps the latter part of the seventeenth century. Pomet says, however, that the "*Vanilla's* are much used in France for making up chocolate, and sometimes to perfume snuff,"—the former being at the present time one of its chief applications, but the latter, so far as we know, having quite died out. Many varieties of vanilla are known in commerce, but as of old, the Mexican sort is considered the best. At one time, *Vanilla aromatica*, Swartz, was supposed to be the plant from which most, if not all, the vanilla of commerce was procured. Pereira mentions five species as probably contributing "some of the vanilla of commerce," namely, *V. planifolia*, Andrews, *V. aromatica*, Swartz, *V. guianensis*, Splitberg, *V. palmarum*, Lindl., and *V. pompona*, Schiede. By some authors *V. sylvestris*, Schiede, and *V. sativa*, Schiede, have also been considered good species yielding some of the best Mexican vanilla. Dr. Pereira, however, considered them as varieties of *V. planifolia*. M. Delteil, in the pamphlet before alluded to, refers Mexican vanilla to the following species: *V. sativa*, *sylvestris*, *planifolia*, and *pompona*; Guiana and Surinam to *V. guianensis*; Bahia to *V. palmarum*; and that from Brazil and Peru to *V. aromatica*. The most recent authority, however, and a very trustworthy one, namely, the "Pharmacographia," of Professor Flückiger and the late Mr. Hanbury, gives the botanical origin of vanilla simply as *V. planifolia*, Andrews, and refers to no other species. Though indigenous to Mexico, vanilla is cultivated, as will be seen from the foregoing remarks, in various parts of tropical America, and has been successfully introduced into the Mauritius and Reunion, from whence large quantities are annually imported. Java also grows vanilla to a considerable extent. To the cultivator it is a remunerative crop in situations where climate and atmospheric conditions are suited to it. It is very easy of

cultivation by fastening shoots to the trees, into the bark of which they soon strike their roots, growing luxuriantly, bearing fruit when they are about three years old, and continuing to do so for about forty years. Under natural conditions the flowers are impregnated by insect agency, but artificial fecundation is frequently resorted to,—indeed it is one of the principal points of consideration in M. Delteil's work.

The gathering and drying of the pods as described by Pomet differs, in some respects, from the descriptions of modern writers. "When they are ripe," he says, "the people of Mexico, those of Guatemala and St. Domingo, gather them, and hang them up by one end in the shade to dry; and when they are dry enough to keep, they rub them with oil to hinder them from drying too much, and prevent their breaking, and then they put them up in little bags of fifty, a hundred, or a hundred and fifty to bring them hither. Nevertheless, there are some who value their gain more than their conscience, who let them hang upon the stalks till over ripe, and receive from them a black fragrant balsam, that flows till the essential part of the *vanilla* is exhausted, and it can run no more; and then they gather the pods, and pack them up for sale as aforesaid." The plan now adopted is to gather the pods before they are quite ripe and to allow them to ripen by alternately wrapping them in cloths and exposing them open to a moderate degree of heat. This process is said to preserve or develop their full fragrance. When ready for exportation they are made up into bundles and wrapped in paper. What the "black fragrant balsam," of which Pomet speaks, could have been used for, we have no record; indeed, referring to it in another part of his article, he says, "As to the balsam, the Spaniards keep that, for we have none of it brought to us." His advice, with regard to the choice of vanilla holds good at the present time. On this point he says, "Choose such as are well fed, thick, long, new, heavy, not wrinkled, or rubbed with balsam, and which have not been kept moist, but of a good smell: and beware of those that are small and dry, and of little smell." The Mexicans in early times appear to have been very fond of the vanilla flavor in their chocolate, indeed, we are told that they were "mighty lovers of these plants."

With regard to the odorous principle of vanilla it is shown in the "Pharmacographia," that it is not contained in the fleshy exterior portion of the pod but in the interior alone. Its use is chiefly for flavoring chocolate and confectionery. It fetches a high price, and its imports are necessarily small when compared with other commodities.—*Pharm. Jour. and Trans.*, May 8, 1875.

ASAFŒTIDAS OF THE BOMBAY MARKET.

BY W. DYMOCK.

Professor of Materia Medica, Bombay.

Three distinct kinds of asafœtida are found in the Bombay drug market, and are known to dealers as Abushaheree Hing, Kandaharee Hing, and Hingra.

Of each of these drugs numerous qualities, more or less mixed or adulterated, are met with, but I purpose first to notice the unadulterated varieties only.

Abushaheree Hing is brought from the Persian Gulf ports, principally from Abushaher and Bunder Abbas; it is produced in Khorasan and Kirman by the *Ferula alliacea* of Boissier.

Specimens of the plant with the gum resin attached, have been supplied to me through the kindness of Mr. Ardeshir Mihrban, of Yezd, and these specimens, which show both flowers and fruit, have, with plenty of mature seed, been forwarded to Mr. D. Hanbury, who has kindly taken the trouble of submitting them to Boissier, and has also sent packets of seed to the botanical gardens of Kew, Edinburgh, Oxford, Paris, St. Petersburg, Berne, Strassburg, Florence, Pisa, Naples, Palermo, Athens, and to botanical friends on the Mediterranean coast, in South Africa, and a few other places.

The specimens sent to Mr. Hanbury were collected near Yezd and Kirman, and were from three and a half to four feet in height, and the roots of some young plants which had never flowered were quite fresh when they arrived in Bombay, and exuded a thick milk when cut, which after a day or two became brown and translucent.

It is this drug alone which appears in the Bombay Custom returns as Hing or asafœtida; all other kinds pass under the name of Hingra. Hing arrives here either in skins sewn up so as to form a flat, oblong package, or in wooden boxes. It varies in appearance with age; when quite fresh it is soft and of the consistence of treacle, of a dull olive brown color, and *purely garlic odor;* it is mixed with about an equal bulk of slices of the root. After having been kept some time the gum resin becomes hard and translucent, and of a yellowish-brown color.

In 1872-73, 3367 cwts. of this drug were imported from the Persian Gulf.

The method of collection has been described to me by Mr. Godrez Mihrban, of Yezd, and resembles the method of collecting asafœtida,

as described in the "Amanitales," except that the slices of root are mixed with the juice.

The price of the best Hing in Bombay, is from twenty rupees to twenty-two rupees per maund of forty pounds.

Kandaharee Hing is a much rarer article, and only occasionally appears in this market. It is brought from Kandahar, packed in goat skins, which are sewn up into an irregularly-shaped oblong bag with the hairou tside. This asafœtida, when fresh, is in flaky pieces quite wet with essential oil, of a yellow color, opalescent, with an odor like a mixture of garlic and oil of caraways. When kept for some time the gum resin loses its moisture and gradually becomes perfectly transparent and of a golden-yellow color; the odor also loses much of its aroma, and approximates to that of the best asafœtida of European commerce. Some packages of the latter, which I have examined this season in Bombay, I found to contain small portions of the moist opalescent gum mixed with the ordinary opaque kind, as well as with some fragments of an intermediate character, partly opaque and partly opalescent. I believe this drug will turn out to be the superior kind of asafœtida noticed by Bellew as obtained from the node or leaf-bud at Kandahar. Kandaharee Hing is little known in Bombay, and is not retailed in the shops. It fetches about double the price of Abushaheree, and is not always obtainable; it is used as a condiment by wealthy people in Northern India.

Hingra or the asafœtida of European commerce, comes to Bombay in large quantities from two sources, viz.: Southern Persia and Afghanistan. The Persian drug is met with in two forms, viz.: in tears more or less agglutinated together, and secondly, as a soft, white, viscid mass. It arrives in skins or boxes, and is mostly exported to Europe, but some is used in India as a condiment or medicinally by the poorer classes. This gum resin is the Anghuzeh-i-Lari of the Persians, and there seems to be little doubt that it is the produce of Kämpfer's plant, whichever that may be. In price it varies much; the average for a good quality will be about ten rupees per forty pounds.

The Afghan drug differs somewhat from the Persian in appearance and odor. The best samples occur in small flat pieces or tears, to one side of which a few particles of sand are adherent as if the gum had run out into the ground near the root; these pieces are quite hard and dry, yellowish-white externally, and display when broken, a conchoidal milk-white surface. Many packages, as already mentioned, under

Kandaharee asafœtida, contain the opaque gum above described mixed with opalescent pieces and moist yellow particles together with much dirt; from such packages the best tears are removed, and the remainder pressed together forms second sort asafœtida. Afghan Hingra is generally packed in skins, and the best sort will fetch about twelve rupees per maund of forty pounds.

The adulteration of Hing is carried on in Bombay. It is simply mixed with gum arabic by treading the two together; the mixture is then packed up in skins so as to resemble genuine packages. Several qualities are prepared containing different proportions of gum.

Hingra is adulterated in Afghanistan and in Persia by the admixture of some white, earthy material. The adulterated article which comes from Persia is in dirty white gritty masses, and becomes very hard when kept. That from Afghanistan, is of a brown color and in small roundish masses, easily crushed into powder by pressure; according to Bellew, gypsum and flour are the adulterations.

A substance called Heera Hing is also met with here; it is obtained from the packages of Abushaheree Hing; many of these are quite liquid in the centre; the people who buy them for adulteration, squeeze out this liquid portion and retail it at a high price as Heera Hing; it is of the consistence of treacle, and when dried becomes solid and translucent.

From the examination of a great many bales of fresh Hingra, I have come to the conclusion that the Persian variety is produced by a different plant than the Afghanistan. Probably, *Scorodosma fœtidum* will prove to be the source of the Persian and Falconer's *Narthex* of the Afghanistan kind.—*Pharm. Jour. and Trans.*, May 29, 1875.

COMMERCIAL SPONGES.

It is sad to consider how much we lose in every walk of life through lack of a little observation. There are few stonemasons who, like Hugh Miller, are led to become noted geologists by noting and studying the beautiful fossils in the stones they chisel. A butcher may cut up beeves and porkers by the hundreds, or a fisherman spend a long life on the shore, without noticing the most obvious points of interest and instruction in the physical structure of his victims; and only when a naturalist calls his attention to the beautiful adaptations, which have before passed unnoticed, will have his interest profoundly excited, which

may ever after give him a new motive and zest in his work. The most of us will use sponges in an indefinite variety of ways, all our lives, without even once stopping to think how they were formed; whether they are plants, animals, or neither, or what are their history and habits.

The ordinary sponges of commerce, which we use so extensively, have but little resemblance to animals or plants, and belong to a class of organic bodies concerning the affinities and classifications proper of which there has been much doubt. And this doubt has led naturalists to apply the question-begging appellation of zoöphytes, or plant animals, to these and similar organisms. They are now generally considered members of the animal kingdom. The parts we use are the mere skeletons, composed of a kind of horny substance. The animal itself is a soft, jelly-like, amorphous mass, which fills up all the intercellular spaces, lines the tubular canals, and forms a jet black or sometimes a dark purplish skin on the outside, covering the whole skeleton, excepting the larger openings, which project beyond its general surface. In this form the sponge exists in the water, and, out of its native element, is hard and glistening on the outside, and very strongly resembles a piece of liver.

The mode of life in this low order of existence, which is regarded as a compound animal, is very simple, and we would be disposed to call it extremely uneventful. Sponges grow, by a kind of lichen-like root, to some foreign object on the sea floor, and never move from their position; they have no power to contract or expand their bodies as a whole, or any part of it; and they are quite insensible to every sort of irritation. Their only power seems to be that of absorbing large quantities of water, which they again yield up on pressure without any injury to their texture. The water, which permeates their whole mass, and maintains a constant circulation through it, keeps the skeleton soft and elastic, brings to the animals the air and food on which they subsist, and carries away waste matter from the body.

On examination of a sponge skeleton, it will be seen that the porous surface is finer and of closer texture than the interior, that there are large apertures scattered indiscriminately over the surface, and between these are much finer openings, covering the complete outer surface of the sponge. The latter are called pores, and serve as channels of entrance to the water, which, after circulating through the body by means of the tortuous and branching canals which make up its inner skeleton,

passes out at the larger openings. These chimney-like apertures are called *oscula*, but the name is a misnomer, for they are, in reality, vents. They vary in number in the different species, and are sometimes reduced to a single one. By what force the water is made to circulate through the sponge mass is not definitely known. Some have attributed it to vibratile ciliæ, planted within the porous canals which, by their motion, create a circulation in the water. Others ascribe it to the principle of osmosis, by which membranes of all animals, and many other porous substances, transmit fluids and gases according to their density and power to act on the transmitting substance.

When obtained for commercial purposes, the animal matter can be removed by soaking it a long time in salt water, and then—after it is rotted by this means—rinsing it out. This leaves the horny skeletons just as we use them.

The finest sponges of commerce come from the Mediterranean sea. Our best bath sponges are doubtless from this locality, but the coarser sponges we see most commonly are largely from the coast of Florida or the Bahama Islands. Sponges are found abundantly in tropical waters generally, and perhaps nowhere more abundant than in the seas of the Australian islands. They gradually decrease in numbers towards the colder latitudes till they become entirely extinct. They vary much in shape. Some are beautifully shaped like a vase, others are semi-cylindrical, others nearly flat like an open fan; some are branched like the opened fingers of a hand, and are called glove sponges, and in others these branches seem to be reduced to only one, which is shaped somewhat like a club. These different shapes may belong to one species, and the differences are due, so far as known, to the fact that the first mentioned are found in deep water, and they grade, in the order described, up to the last, which grow in much shallower water.

Sponges are not confined to recent seas, though commercial ones are not known to have existed earlier, because the keratose matter furnishes hardly favorable conditions for petrifaction. In the oölite and chalk formations, sponges containing flinty spicules were very abundant; and in most of the earlier formations, large sponges containing calcareous spicules abounded. These very closely resemble corals, and have been mistaken for them by some of our best geologists. The spiculæ or needle-shaped particles, which are often microscopic in size, are not thrown in without order, but are arranged to support the skeleton. The horny sponges do not secrete or deposit spicules, but these

are sometimes found within the skeleton in broken and disordered form, which shows they were taken in from without.

There is an elastic sponge, as it is called, that is somewhat largely used now as a substitute for curled hair in stuffing beds, cushions, car seats, etc., but this is an entirely different thing from the sponge of commerce. Before it was used for this purpose, it was a worthless sea grass, growing abundantly among corals in rather shallow water.—*Scientific Amer.*, *June* 26, 1875.

COD-LIVER OIL WITH QUINIA.

BY M. H. STILES.

Twelve years ago, in a paper read before the Pharmaceutical Society, Dr. Attfield called attention to the fact that the natural alkaloids combine with oleic acid to form oleates, which are soluble in oil.* Although he particularly instanced quinia, and suggested that the oleate of quinia would be a convenient medium for the preparation of "cod-liver oil and quinia," I do not think the method has been adopted to any considerable extent.

I lately had occasion to prepare some cod-liver oil with quinia. I employed what I believe to be the usual process, precipitating the alkaloid with ammonia, and, after washing and drying, dissolving it in pure ether, then mixing this ethereal solution with the oil. The customer, a lady, quickly returned it, having a very strong objection to the taste of the ether.

I therefore tried the plan of preparing the oleate, and dissolving that in the cod-liver oil, and found it perfectly satisfactory.

The preparation may be made as follows:

Take of	Sulphate of quinia,	60 grains.
	Diluted sulphuric acid,	1 fluidram.
	Solution of ammonia,	a sufficiency.
	Distilled water,	a sufficiency.
	Purified oleic acid,	1 fluidounce.
	Cod-liver oil,	29 fluidounces.

Dissolve the quinia in the diluted sulphuric acid mixed with 4 oz. of water, add a slight excess of ammonia, stir well, transfer the whole to a calico filter, and, after carefully washing the precipitate, press it be-

* "Pharm. Journ.," second series, vol. iv, p. 388. "Amer. Journ. Pharm.," 1863, p. 249.

tween folds of bibulous paper and dry it by the heat of a water-bath. Dissolve the quinia thus obtained in the oleic acid by the aid of a gentle heat, mix the solution whilst warm with 5 oz. of cod-liver oil, also warm, strain through cotton wool, or filter through paper if necessary, then add the remainder of the oil. The product should measure 30 fl. oz.; each tablespoonful (fℨss) contains oleate of quinia equal to one grain of sulphate.

The above preparation has the characteristic taste of quinia and cod-liver oil, the oleic acid, from its small amount, not being preceptible.

A sample, prepared two months ago, has kept well, being quite clear and as free from deposit and objectionable odor as on the day it was made.

Whilst writing on this subject, I may remark that I am surprised more attention has not been given to the production of ointments and oleaginous liniments containing the oleates of aconitia and atropia. I believe that these preparations would be more certain and uniform in their effects, and therefore more reliable than the corresponding liniments of the "Pharmacopœia."—*Pharm. Journ. and Trans.*, Feb. 13th, 1875.

VARIETIES.

Important Improvement in Photography.—It is a well-known fact that it is utterly impossible to photograph certain colors. Violet and blue are chemically very active colors, while red, yellow and green act very little, if at all, on the sensitized plate. Hence we see a blue ribbon on a yellow dress, rendered photographically as a white ribbon on a black dress. Dr. Vogel, the celebrated German photographer, has found that bromide of silver can be made sensitive for the red, yellow and green rays by adding to the collodion coloring substances which powerfully absorb said rays.

By using collodion colored red by corallin, the yellow rays will act with nearly the same energy as the blue rays. If colored green by anilin green, we can very well photograph red; and so on.—*Arch. f. Pharm.*, May, p. 180.

Necrometer.—Bouchert found, by examination of 1,100 men (living, dead and in a trance), that no corpse has a higher temperature than 20° C. (68° F.) He constructed a thermometer (alcohol) in such a way that the alcohol does not become visible before 20° C. have been reached. Even a child will be able to tell whether life is extinct or not.—*Ibid.*, p. 138.

To Deprive Cocoa-nut Oil of its Odor.—Mix with 1-16 part freshly prepared bone-black and 1-32 part calcined magnesia, digest for three days, shaking frequently, let stand till clear, and filter.—*Journ. Applied Science*, 1874.

OIL OF TURPENTINE is deprived of its odor by distilling it over tannic acid. —Gunier's patent —*Boettger's Notizblatt.*

CEMENT FOR FASTENING INDIA RUBBER ON METAL.—Macerate one part of powdered shellac in 10 parts strong water of ammonia for 3 or 4 weeks. On application it will soften the India rubber, but this will regain its hardness after the ammonia has evaporated.—*Pharm. Centralh.*, 1875.

FERRUM HYDROGENIO REDUCTUM.—Crolas (Lyons, France) calls attention to the fact that sulphuric acid in contact with iron will give rise to formation of sulphuret of hydrogen, and says that the same objection applies to muriatic acid, which often contains more than traces of sulphuric acid. This will be an objection to their use in examining reduced iron for sulphuret, and he recommends, therefore, oxalic acid.—*Rép. de Pharm.*, 1874, p. 9.

SULPHO-CARBONATE OF POTASSIUM is the name given to the newly-discovered destroyer of *Phylloxera vastatrix*; it is prepared on a large scale at Pharmacie Centrale (Paris) by shaking together equivalent parts of sulphuret of potassium and bisulphide of carbon. The resulting solution of potassium sulpho-carbonate does not contain any sulphide, has a faint odor and light-yellow color. Bouchardat recommends its application as a wash or ointment for men and animals.—*Annuaire de Thérap.*, 1875.

ALBUMEN IN URINE.—C. F Kuntze recommends the following reaction (of Galipe) for albumen: Add two or three drops of the suspected urine to a not too weak solution of picric acid. If albumen be present, there will appear a distinct turbidity, and, on heating, the albumen will collect in a clot.—*Zeitschr. f. Pract. Medicin*, 1875. H. M. W.

ESSENTIAL OIL OF CHERRY LAUREL consists, according to the investigations of W. A. Tilden, D. Sc, mainly of benzoic aldehyd accompanied with hydrocyanic acid (less than 2 pr. ct., according to Umney), possibly benzoic alcohol (perhaps 1 pr ct.) and minute quantities of an odorous resin.—*Pharm. Journ, Lond.*, 1875, March 27, p. 761.

F. L. Winckler isolated the principle from which oil of cherry laurel is obtained, in 1839 ("Buchner's Repert.," lxv, p. 1). From the seeds of cherry laurel he obtained crystallized amygdalin, but from cherry laurel leaves an amorphous compound was obtained, which he regarded as being probably amorphous amygdalin in combination with a bitter principle.

HYDROBROMATE OF ESERINA (*physostigmia*) has been proposed by Duquesnel for medicinal use, it being obtainable in crystals, while the other salts of this alkaloid are very hygroscopic and mostly uncrystallizable.—*Rép. de Pharm.*, 1875, Feb, p. 105.

A NEW THERMOMETRIC SCALE.—At a meeting of the Chemical Society, recently held in London, Mr. John Williams read a paper in which he proposed a new thermometric scale. After specifying the several defects of the scales now in common use, he proceeded to describe the new one which he had devised. This is

based upon the physical characters of mercury, which solidifies at a very low temperature and boils at a very high temperature. Mr. Williams, therefore, takes the interval between these two points and divides it into one thousand degrees, making his zero the solidifying point of mercury. According to this scale the melting-point of ice is 100° and the boiling-point of water 350°.

Among the advantages to be derived from such a scale may be mentioned the avoidance of fractions of degrees, since the degrees are very much smaller than those of either the Centigrade or Fahrenheit scales. Another advantage of the Milligrade Scale, as it is termed by Mr. Williams, is the doing away with minus degrees, while at the same time, the indication of temperatures below the freezing-point of water is sufficiently distinct, as all numbers below 100° of the Milligrade Scale are between 0° and —40° of the Centigrade scale. These are certainly considerable advantages, but it remains to be seen whether they are sufficient to ensure the substitution of the Milligrade Scale for those now in common use.—*Pharm. Journ. and Trans.*, May 8th, 1875.

CHLOROFORM. By C. Remys.—(1.) Pure cholorform has a specific gravity of 1·500 at 15° C. and boils at 60·5°, if the sp. gr be 1·492 the boiling-point is 59·75° —60°, and the sample contains about ½ per cent. alcohol.

(2.) A sample of higher boiling-point than 60·5° contains such substances as amyl and butyl compounds; the sp. gr. of such a sample may rise to 1·502°.

(3.) The presence of ⅛ per cent. of alcohol lowers the sp. gr. ·002. A small quantity of alcohol is the best preservative of chloroform against decomposition.

(4.) Decomposition of chloroform takes place even in the dark. The smallest trace of moisture and air sets up decomposition, the chief products being chlorine, hydrochloric acid and phosgene gas.

(5.) All commercial chloroform contains fusel oil.—*Journ. Chem. Soc.*, May, 1875, from *Arch. Pharm.* [3], v, 313-323.—

KOSIN. By F. A. Flückiger and E. Buri.—The koso-tree is cultivated in every village in Abyssinia, and its female flower panicles have been used there for a long time as a domestic remedy against tapeworm. The koso-flowers yield about 3 per cent. of kosin, a yellowish crystalline body, without smell or taste, and to which the anthelmintic properties of the flowers have been attributed. The specific gravity of kosin is so high, that it sinks in sulphuric acid of sp. gr. 1·842. It is freely soluble in ether, benzin, carbon sulphide, chloroform and boiling alcohol. Aqueous solutions of the caustic and carbonated alkalies also readily dissolve it, and when such solutions are neutralized the kosin is precipitated. Its formula is $C_{31}H_{38}O_{10}$.—*Journ. Chem. Soc.*, May, 1875, from *Pharm. Journ. Trans.* [3], v, 562.

COMPOSITION OF GUM TRAGACANTH.—Giraud has made a minute examination of the chemical characters of gum tragacanth. He finds (1) that this gum is but very slightly soluble in water, and that the product in the filtrate is not a definite principle like arabin, but is a mixture of several substances; (2) that, digested on the water-bath for twenty-four hours, with fifty times its weight of water, much of it is transformed into a soluble gum, which no longer swells after drying; this new substance is pectin; (3) that, under the action of water containing 1 per cent. of

acid, the production of pectin takes place in two or three hours. It becomes entirely soluble, and alcohol precipitates pectin, not arabin, from the solution. Alkalies change it into pectates and metapectates. Hence gum tragacanth consists for the most part of a pectic principle insoluble in water, apparently identical with Fremy's pectose. From it, by precipitating the pectin solution by barium hydrate, and decomposing by an acid, pure pectin acid was obtained. Upon analysis, gum tragacanth yields as follows: Water, 20 per cent.; pectic compounds, 60 per cent.; soluble gum, 8 to 10 per cent.; cellulose, 3 per cent.; starch, 2 to 3 per cent.; mineral matter, 3 per cent.; nitrogenous matters, traces.—*Am. Jour. Sci. and Arts.*, from *Moniteur Scientifique*, III, v, 361, April, 1875 —

PHARMACEUTICAL COLLEGES AND ASSOCIATIONS.

College of Pharmacy of the City of New York.—A special meeting of the members of the College was called for Monday, June 7th, at the college-rooms, to elect a Board of Pharmacy for the city and county of New York to serve for the ensuing three years, the term of the old Board expiring on that day. Mr. Paul Balluff and Wm. Neergaard, M. D., having declined a renomination, the following were elected as members of the new Board: Walter De F. Day, M. D., Benjamin E. Hays, M. D., William Balser, M. D., Theobald Frohwein, Gustavus Ramsperger.

Philadelphia College of Pharmacy.—To increase the facilities for instruction, an oxyhydrogen stereopticon has been made for the college by the well-known optician, Joseph Zentmayer, of this city, and it is intended to use this instrument hereafter freely in illustrating the lectures.

The National College of Pharmacy at Washington, D. C., impressed with the serious disadvantages arising from the notorious multiplicity and want of uniformity of certain unofficinal medicinal preparations in general use in the District of Columbia, and believing that the employment of Materia Medica of uncertain kind and quality is unworthy of professional sanction, have invited the Medical Society of the District of Columbia to unite with them in an earnest effort to remedy this evil. The invitation was courteously accepted, and a joint committee from the two bodies instructed to prepare and submit a series of reliable formulæ for such of these preparations as may be deemed of sufficient importance.

The Committee—consisting of Doctors James W. H. Lovejoy, J. E. Morgan, J. C. Reily, C. H. A. Kleinschmidt and Chas. W. Franzoni on the part of the Medical Society, and Messrs. Chas. Becker, F. S. Gaither, W. S. Thompson, W. G. Duckett and Oscar Oldberg from the College—after determining upon a general plan, and a comprehensive schedule of preparations, which, it is believed, should be embraced in the forthcoming formulary, agreed to entrust the pharmaceutical part of the work to the gentlemen representing the College of Pharmacy.

Cincinnati College of Pharmacy.—From the nominations made by this

College, in accordance with the Pharmacy Law of 1873, the Judges of the Court of Common Pleas have appointed Messrs. J. F. Judge, F. L. Eaton and Chas. Schmidt as the Pharmaceutical Examining Board of the city of Cincinnati for two years from June 1st, 1875.

PHARMACEUTICAL SOCIETY OF GREAT BRITAIN.—The last pharmaceutical meeting of the session was held April 7th, President Thos. H. Hills in the chair. After the reception of donations to the library, museum and herbarium, Professor A. W. Hofmann, of Berlin, exhibited a collection of chemicals, over one hundred in number, most of them prepared by his pupils for the purpose of enabling him to illustrate the Faraday lecture, which Professor Hofmann had been invited to deliver before the Chemical Society of London, and for the subject of which he had chosen the life-work of Liebig in chemistry, experimental and philosophical. Substances which Liebig himself discovered were designated by a white label, and those discovered by others, but which he examined and the composition and formulas of which he determined, by a blue label. The Society, he said, would feel interested in looking at the collection from two points of view. One was that they had the glorious result of a single life before them representing what he might call an encyclopædic display of his work; and the second point was that it showed the enthusiasm with which young chemists of our day most willingly gave up a considerable part of their time for the sole purpose of exhibiting the labors of their grand countryman in the most conspicuous light to the chemists and pharmaceutists of Great Britain.

Mr. E. M. Holmes read a paper on the identity of Goa powder and *araroba*. Under the latter name, a drug partly consisting of lumps of a yellowish substance and partly of yellowish wood has been imported into Great Britain form Bahia, and is used with success as an external application in skin diseases. From the microscopic structure of the wood, and from some leaves received from Dr. J. L. Paterson, of Edinburgh, Mr. Holmes refers the origin of *araroba* * or *chrysarobin* to a species of *Cæsalpinia*. Professor Attfield has recently ("Pharm. Journ. and Trans.," March 13, 1875) demonstrated that *chrysarobin* contains 80 to 84 per cent of chrysophanic acid, besides a bitter principle, glucoside and resinous matter, and suggested its probable identity with the so-called Goa powder, which had long been imported into Bombay through Goa, and was described by D. S. Kemp in the "Pharm. Journ.," for February, 1874. The latter is usually of a dull ocher, pale brown or even chocolate color; but the tests made by Mr. Holmes with ammonia, alcohol, ether, benzol, chloroform and strong sulphuric acid leave hardly any doubt of the identity of the two substances.

Mr. Plowman has also experimented upon the two articles with benzol, and obtained from Goa powder eleven years old 70 per cent. of soluble matter; from recently obtained Goa powder, 87, and from *chrysarobin*, 84 per cent., the solutions yielding, upon evaporation, tufted crystals of chrysophanic acid.

Professor Bentley reminded the meeting of the importance which this article has now attained, while eleven years ago the Goa powder then exhibited received but little attention; he gave some interesting information regarding several South American dye-woods, and of the plants containing chrysophanic acid.

* According to Prof. Bomfin, of Bahia, the name araroba or arariba is applied by the natives to a number of drugs. See an investigation of *Arariba rubra* in the "Amer. Journ. Pharm.," 1862, p. 395.

Prof. Attfield stated that a specimen of "genuine Goa powder" presented to him four or five years ago, was simply *cudbear*.

Mr. Moss said that araroba had been received in England by one firm for many years, but, he believed, had been exported again to the East Indies.

Mr. Postans referred to a cure of ringworm, effected by moistening the affected part with water and rubbing some powder over it; but particles of the powder were apt to get into the eye, causing irritation. Subsequently a paste of Goa powder with oil was used; washing, however, distributed the coloring matter over the hair, converting it from auburn to ugly purplish-brown.

A paper entitled "Notes on the Pharmacy of Atropia," was read by Mr. W. Willmott, in which the causes of irritation of the eye by atropia solution were discussed. Aside from idiosyncrasy, the author found that it must not be referred to impurity of the atropia salt, or to acidity of the solution, the latter being neutral, and no change in the reaction being observed on long exposure; in the hands of patients, however, the solutions sometimes acquire an acid reaction (Mr. Linford suggested from the secretions of the patients' eyes) without causing irritation. On several occasions when complaints were made, the solutions were found to be full of dust, and, after filtration, could be used without causing pain.

Mr. Williams referred to belladonnia as being probably present in some atropia.

In this connection Prof. Hofmann referred to the examination by chemists of the bodies presented by nature, and to the probability of preparing such compounds artificially after their true composition is known.

Mr. A. W. Gerrard read a paper on "Ergot and its Liquid Extract," in which it is suggested to preserve fresh ergot when dry by bottling it, and fixing a piece of lime, tied in muslin, to the interior of the stopper. The author considers the exhaustion of the ergot by ether, in preparing the liquid extract of the British "Pharmacopœia" as unnecessary, and its subsequent digestion with water as impracticable; he offers to improve the process by macerating 16 ounces of the powder first with four pints, and afterwards with two pints of cold water, evaporating to ten fluidounces, adding eight fluidounces of alcohol, and when the albumen has coagulated, decanting the clear portion and straining the remainder through tow; the product should measure 16 fluidounces.

The modified process was endorsed by Messrs. Hampson and Linford, the latter remarking that the separation of albumen was more easily effected by adding the alcohol to the warm liquid, and then filtering the extract through paper. A reduction of the alcohol to one-half would make the extract rather strongly acid in a few months.

AMERICAN PHARMACEUTICAL ASSOCIATION.

NOTICE.—The Twenty-third Annual Meeting of the American Pharmaceutical Association will be held at Odd Fellows' Hall, corner of Berkeley and Tremont streets, in the city of Boston, Mass., on Tuesday, September 7th, 1875, commencing at 3 o'clock P. M.

Ample arrangements have been made by the Local Secretary, Mr Samuel A. D. Sheppard, and the Local Committee of Arrangements, for the reception of articles for exhibition, and it is confidently expected that a full display will be made. Ex-

hibitors are reminded that to insure a successful and advantageous display, it is necessary that the articles for exhibition should be in the charge of the Local Secretary several days before the meeting takes place, and they are therefore earnestly requested to make their shipments in time, directed to the Odd Fellows' Hall.

Chairmen of Standing Committees are requested to furnish a copy of their respective reports, together with a synopsis of the same, to the Chairman of the Committee on Papers and Queries, Mr. Wm. Saunders, London, Ontario, as provided by Article IX, Chapter VI, of the By-Laws. In a like manner, all persons writing a paper for the Association, whether in reply to a query or as a volunteer paper, will report to the same chairman, previous to the third session (*vide* Article VIII, Chapter VI, of the By-Laws); and it is particularly desirable that such paper, together with a synopsis of the same, be in the possession of the chairman, before the opening of the first session.

Compliance with these requests will greatly expedite the business of the Association, which, in view of the arrangements to be made for the meeting in Philadelphia in 1876, promises to be more arduous than usual.

☞ It is hoped that members will generally attend, and that the Association will be largely increased by new memberships. Our friends in Boston expect this, and will doubtless make our visit one of pleasure, socially as well as intellectually; in short, will make it an occasion to be remembered, as is our last visit—just ten years ago—to that hospitable city.

Further information concerning the meeting and arrangements made, will be given in the circular of the permanent Secretary, Prof. J. M. Maisch, No. 145 North Tenth street, Philadelphia, Pa.

C. LEWIS DIEHL, *President.*

Louisville, Ky., June, 1875.

EDITORIAL DEPARTMENT.

UNUSUAL DOSES IN PRESCRIPTIONS.—In our last number we published a paper by Jas. Kemble, Ph. G., on this subject, with a formula, which should have been printed as follows, in order to convey a correct idea of his proposition:

℞.—Liquor. ammon. acet.,	. . .	fℨiii
Spirit. nitri dulc.,	. . . . .	fℨii
* Tr. aconiti rad,	. . . . .	fℨiss
Syr. limonis q. s. ad	. . . . .	fℨiv

℔. Et. sig., a dessert spoonful every two hours.

* C. C.

We are glad that this subject has attracted the attention which it deserves, and has been brought to the notice of the medical and pharmaceutical professions, and we trust that it will not be allowed to rest until some difinite conclusion has been arrived at. The means which have thus far been suggested to indicate the correctness of unusual doses, are several: 1. In Germany and several other European countries, the physician is, by law, compelled to affix after the quantity of the dangerous ingredient ordered, an exclamation mark (!) to show that the writer really intend

to give the medicine in such doses. 2. In Great Britain it is now customary for the physician to sign his name after, and on the same line with the order for such an unusual quantity. 3. In this country we have now the action of the Medical and Pharmaceutical Societies, of Richmond, Va, in the adoption of the letters *P. C.* (*præter consuetudinem*); and 4, in Camden, N. J., the adoption of the letters first proposed by the Richmond Pharmaceutical Association, ℞ *R.* (*quantum rectum*), by which to indicate the correctness of the dose. To these marks must be added, 5. the suggestion of Mr. Kemble, as indicated above.

In the prescription as printed above, the first four of the adopted signs would be used thus:

1. Tr. aconiti rad., ... fʒiss (!)
2. Tr. aconiti rad., ... fʒiss (J. Smith, M. D.)
3. *P. C.* Tr aconiti rad., ... fʒiss
4. ℞ *R.* Tr. aconiti rad., ... fʒiss

All will fulfill the intention for which they have been adopted; but in order to be of good use, such a custom should be followed not locally, but uniformly throughout the entire country. The approaching meeting of the American Pharmaceutical Association offers an excellent opportunity for bringing this important matter at once to the notice of the pharmacists throughout the country, and of taking the proper measures to lay it before the American Medical Association, so that by the action of the two National Associations representing the professions immediately interested, the desirable uniformity could be secured.

But, suppose that the two bodies mentioned, should agree upon a suitable sign for this purpose, the question is not yet solved, as to what must be regarded as an *unusual* dose. Is every individual physician or every pharmacist to be the judge in this matter? Standard authorities cannot be referred to, unless a special one should be selected, because they frequently differ in the amounts, and in the majority of books, the *maximum* doses are not specially indicated. It would, therefore, be necessary, that such a table of maximum doses be framed. We consider it as one of the gravest short comings of our "Pharmacopœia," that it does not contain a posological table, indicating not only the single maximum dose, but, on account of the cumulative action of many medicines, also the maximum quantity for twenty-four hours of dangerous remedies, that a physician may prescribe for an adult and a pharmacist be justified in putting up, without the mark of correctness.

Such a posological table is necessary both for the physician and the pharmacist; it need not embrace the entire Materia Medica, but only those articles which in overdoses would be absolutely injurious. We are well aware of the objections that may be advanced against such a table; but without any guide, the danger to the patient and the annoyances to both professions must obviously be far greater than with one that has been judiciously devised.

In connection with this subject, it is but proper to refer to the neglect of many physicians of writing upon every prescription the name of the patient and indicating approximately his or her age. This can be well done by a careful and judicious medical attendant and would serve the additional purpose of preventing mistakes in giving to patients the medicine intended for another member of the family, in case two or more should be prostrated by sickness. Mr. Jones' babe; Mr. Jones' child

Lizzie; Mr. Jones' daughter Lizzie; Miss Lizzie Jones and Mrs. Jones would at once inform the pharmacist, approximately, of the age of the patient.

THE CENTENNIAL CELEBRATION OF 1876.—The erection of the buildings for the International Exposition in Philadelphia progresses favorably, and in looking at the imposing structures we are forcibly reminded of the probability that many pharmacists, druggists and others interested in pharmacy will visit the United States next year, and should be received with that hospitable spirit which makes the stranger feel at home, and places him into the way to follow his individual inclinations in every respect. The majority of the visitors will not merely desire to take a look at the Exposition, but many will aim to see something of the New World, and will visit distant parts of the country. To secure to them beforehand the conviction that wherever they may go to they will meet with friends who will interest themselves in their behalf, would make their intended journey much more pleasant, as it would assure them that they would receive trustworthy advice upon the objects of their journey, no matter to which part of this continent they might go.

The Philadelphia College of Pharmacy will, at the quarterly meeting in June, take action upon the report of a committee appointed to propose suitable measures, and, while this report may contain suggestions which, with some modifications, might be adopted in other localities, it would be well if the various colleges and pharmaceutical associations would take this subject into consideration and, if possible, mature a plan of their intended action which, at the meeting of the American Pharmaceutical Association, might be compared with others, so that a perfect harmony of action might be secured. We apprehend that, in order to work smoothly, much correspondence will afterwards be necessary in arranging the details during the coming winter, and the outlines of the plan ought, for this reason, not to be delayed.

ELIXIRS.—The present number contains essays on two elixirs for which we have hitherto not published any formulas. We recognize the value of palatable medicines, and regard with favor all attempts at improving their taste and appearance. We are not opposed to these modern elixirs, except as regards the manner in which they have been forced upon the market as specialties, and prescribed as such by physicians, notwithstanding it had been repeatedly shown that many could be regarded in no other light than nostrums, thinly disguised under vague claims of pretended composition. It should be the aim of the pharmacist to put the physician into the way of *prescribing* for his patients, in a pleasant form, any combination he may consider adapted to the case, instead of offering these so-called *elegant* preparations, as adapted to a certain class of ailments, in a similar manner as the concoctions of the nostrum manufacturer are put forth; and viewed in this light, it is surprising to us that physicians in general, and medical societies more particularly, have not taken a firm stand against the whole system. The *plan* proposed by Mr. J. F. Hancock, and adopted by the American Pharmaceutical Association at Richmond, Va., in 1873, is doubtless the correct one, since it enables the physician to combine nearly all soluble medicines with an agreeably-flavored vehicle, and it seems to us that if one simple elixir was insufficient to meet the varying taste of the public, two or three might be devised, under different names, from which the physician might select the one best adapted for his purpose. At the meeting of the American

Pharmaceutical Association to be held in Boston in September next, a committee will again report on this subject, and, as far as we are personally concerned, we hope that no deviation from Mr. Hancock's plan will be proposed, but that, if necessary, it may be extended in the direction indicated, and coupled with recommendations of how tinctures, fluid extracts and other preparations made with different menstrua may be *extemporaneously* combined with a simple elixir.

PREPARATION OF PHOSPHORUS PILLS WITH CACAO-BUTTER.—We have received the following communication detailing the manipulations in preparing these pills:

Editor American Journal of Pharmacy:

Having received many requests for further information in regard to the process for making phosphorus pills, I answer through your columns:

Weigh out the phosphorus after the melted cacoa-butter is poured into a bottle, and immediately add it. *Cork* the bottle *tightly*, as the phosphorus will take fire unless this is done, agitate briskly for some time, add the soap, and proceed as directed in Journal for June, p 253. The mass makes an exceilent excipient for quinia, cinchonia, &c., &c., and should be kept on hand. It can be triturated in a mortar, after cooling, without risk.

WM. H. WALLING.

MONUMENT TO DR. HORACE WELLS.—We have received the following circular which explains itself:

Nearly a quarter of a century has passed since Horace Wells, the discoverer of Anæsthesia,—a safe, speedy and effectual means of abolishing sensibility and consciousness,—died.

No monument has yet been erected to perpetuate the memory of Dr. Wells, or, in connection with his name, to commemorate this wonderful discovery. He gave most willingly and cheerfully, wishing it, in his own words, to be "free as air," the use of this boon to humanity; asking of his fellow-men, in return, nothing beyond the proper appreciation of its worth, and the honor that justly belonged to the discoverer. As its importance became more widely known, and the world learned by experience the amazing value of the discovery, the feeling was naturally awakened, that some positive movement should be made towards the accomplishment of this long-delayed duty.

Entertaining this sentiment, doubtless, the Legislature of Connecticut, some two years ago, appropriated five thousand dollars ($5,000) for this purpose; and the city of Hartford a like sum; and under the direction of a committee a colossal statue in bronze of Dr. Wells has been executed by Truman H. Bartlett, Esq., and will soon be ready for erection on some commanding site in the beautiful Park in the city of Hartford, where the discoverer lived, where the grand idea which was to embalm his name and memory in the hearts of his fellow-men everywhere, had its birth, and where his remains now rest.

It is upon the pedestal, which should be also of bronze, and its ornamentation, that any further funds will need to be expended. This will admit of high and costly adornment, in bas-reliefs, in inscriptions, etc., suited to exemplify the uses of the discovery, at the same time that it commemorates the discoverer; and we are informed by the most competent judges, will admit of large outlay without transcending the limits of a severe and correct taste.

In view of this circumstance, and of the fact, also, that, as the subject has been more freely canvassed, an earnest desire has been expressed in many quarters, both in and out of the State, to take part in this undertaking, it has been thought to be expedient, for the purpose of gratifying this wish, and in order to make the work itself more nearly represent the character and value of the service rendered to mankind by Dr. Wells, to receive such subscriptions from physicians and dentists abroad, and through their agency from the public, in the various parts of the country, as they may feel disposed to make. Our appeal is made primarily to the medical faculty and dental profession, not so much because they have a higher personal interest in the subject than others, but because they, of all men, best know the inestimable value of this discovery to the race

The committee who submit the foregoing, represent the medical and dental societies of Hartford, and, in so far as our subject shall meet the views of our brethren elsewhere, we respectfully ask from them such friendly aid, pecuniarily, as they may think proper to give us, and especially that they take such measures to bring the subject to the notice of their friends and the public as, in their wisdom, they shall consider most likely to receive a favorable response.

Letters of inquiry may be addressed to Dr. E. K. Hunt, Chairman of the Committee of the Hartford Medical Society. Subscriptions may be forwarded to Dr. G. W. Russell, Treasurer, Hartford, Conn.

PATENTS.—The draft of a patent law for the German Empire contains a clause stipulating that "no patent can be granted for alimentary articles, beverages or medicines." There is common sense in such a proviso, and we think that it would do our country no harm if our patent laws were amended in this particular direction. A short time ago, an examiner of the Patent Office reported adversely to the granting of a patent for a medicinal compound, and gave excellent reasons for his position; but, if we mistake not, his objections were overruled, they not being in conformity with the letter of the law.

NEW USE OF ACORNS.—We learn from the Swiss "Pharmaceutical Weekly," upon the authority of the trade report of Gehe & Co., that during several years past acorns have been used in Germany, in large quantities, for the adulteration of black pepper. The acorns are turned into small globes, suitably dyed and mixed with true pepper. The business of the adulterator is apt to flourish, and to secure large profits to its patrons everywhere, where low price is the first and prime consideration in the purchase of any commodity.

DANGEROUS EXPLOSIONS.—In the May number of this Journal we alluded to some explosive mixtures which have been occasionally prescribed, and our readers are doubtless familiar with the particulars of the recent explosion in a Boston drug store, whereby several persons were killed and wounded, and considerable damage done to property, and the cause of which will probably never be revealed. It is unnecessary to say what every one of our readers know, that great care is necessary to avoid such dangerous accidents; but it is proper that attention be called to them, more particularly when the combinati ns have not been reported before. In the following cases, recently reported, it will be observed, the accidents resulted from the combination of oxidizing agents with substances readily combining with oxygen with the elimination of gaseous products, as we pointed out on page 233 of this Journal:

A prescription calling for 8 grains of chromic acid and 1 drachm of glycerin was prepared by dissolving the acid in a little water in the vial, and agitating the solution with the glycerin, when the mixture exploded with a violent detonation, fortunately without doing any damage except soiling the ceiling of the store ("Zeits. Oester. Ap. Ver.," June 1).

To compound a prescription for 5 grams hypophosphite of calcium, 50 grams chlorate of potassium, and 400 grams of distilled water, the two salts were triturated in a mortar, when they exploded, burning the operator severely upon both hands and somewhat in the face. To avoid such an accident, the salts should be dissolved separately in water and the solutions mixed ("L'Union Pharm.," May).

James S Marsden was killed, and his wife severely injured, by the explosion of an iron retort, while attempting to prepare oxygen, which he was accustomed to do, both professionally and as an amateur. On this occasion he used a mixture of chlorate of potassium and black sulphuret of antimony, the latter having been supplied to him in place of black oxide of manganese ("Pharm. Jour. and Transactions," April 10). This is a very dangerous mixture, and several cases of severe injury, resulting from its accidental use, are on record.

CORRECTION.—Through an accidental omission in the foot note on page 251 of the June number, Mr. Nicklès results were not quoted correctly. Line six, from below, should read as follows: "Ferric hydrate, ether and hydriodic acid, yield, according to Nicklès (1865), a red solution which is *not* precipitated blue by ferridcyanide of potassium, *until after some time*, and we may add," &c.